REPORT
in
Welding Training and Shipyard Employment

-- by Augusta H. Clawson
Special Agent, Training
Women for War Production
U. S. Office of Education
Washington, D. C.

INTRODUCTION

Through the cooperation of the United States Office of Education, the State Division of Vocational Education and the Personnel Department of the Kaiser Company, I was privileged to train as a welder and to take employment in the Swan Island Shipyard. My purpose has been, through first-hand experience, to ascertain in what ways we can do a better job of training women for shipyard employment. The Army has learned that the more realistic the basic training the better the results. Similarly any applicant for industrial employment who has not had previous experience, whether man or woman, can benefit by sound pre-job training. In suggestions incorporated in this report there is no intent to advocate a program that would "coddle" women either in training or on the job. The sole purpose is so to increase the efficiency of the W.P.T. program that it will contribute to shortening the breaking-in period and aid in decreasing turnover and absenteeism with favorable influence on production.

I have reported in narrative form such of my experiences as I have found to be typical of many of the women in the Yard. Such suggestions as I have to offer are grouped under the general heading "SUMMARY".

I am sincerely grateful to those who made this experience possible.

APPLICATION FOR EMPLOYMENT

United States Employment Service

On April 7th, I applied at the Employment Service office for work as a welder. The interviewer agreed with me that I should first take training. There seemed to be no system of selection beyond the single question: "Are your eyes all right?" I was given a Certificate of Availability and referred to the Counselor who told me that training would take 40 to 60 hours, that I must cover my hair, wear overalls and high shoes or oxfords. She said I would need goggles, helmet and leathers.

Social Security

I went next to the Post Office where I secured a Social Security Number after giving what little information was asked.

Union Hiring Hall

At the Union Hiring Hall I was sent to a large room on the second floor where a number of signs over tables indicated various companies. I stood in line before the one marked Swan Island. When I reached the interviewer, I gave her my certificate of availability and was asked for my name, my social security number, what shift I wanted and when I wanted to start. I answered with "Day

shift, starting tomorrow". She smiled pleasantly, said "All right, be there at 7:00 tomorrow morning. Go now and have your fingerprints and photograph taken. Your dues are $30. You have 21 days to pay."

Union Clearance Routine

The routine of clearance here is very well ordered. I applied first at a front desk where I answered rapid-fire questions: Maiden name? Home? Where born? How long resident of Portland? Previous employment in a Shipyard? At counter 10 I answered more questions concerning age, weight, height, middle name, present residence. I signed several forms, among them a promise not to attempt to overthrow the government. Next came my employment slip with 5 or 6 duplicates. I was told to fill out a card indicating how many War Bonds I would buy and how often. When I said I could not sign for any as yet I was told to sign anyway but to put the date of commencement ahead if I wished.

At still another counter I was advised to take out hospitalization and insurance. I was fingerprinted, photographed and finally referred to the Counselor. She did an excellent job. My only regret was that counseling came after all decisions were made. I was told to get slacks or overalls of some hard-surfaced material, to wear a man's shirt, to wear enough underneath it to keep warm. Heavy shoes would be needed and ski shoes from Lipman's were suggested. I'd need to buy leathers after a few pay days. I was told not to wear my watch for fear of ruining it. I asked for directions and was told to take a St. John's bus and transfer. I asked whether to wear working clothes the first day and the reply was "Oh, I guess it's not necessary the first day."

Purchase of Initial Equipment

This task is not easy for one unfamiliar with work clothes. Should overalls fit snugly or be loose? Should one purchase the kind with straps for tools? Should shoes have leather soles? Should one buy short or long socks, cotton or wool? It is amazing how many decisions must be made without adequate information or knowledge.

COMMENTS

There is a very real nervous, emotional strain about a day like this. I cannot give an adequate explanation of it, but it is so. Women without industrial experience have probably not encountered such impersonal and standardized handling before, and it gives one a helpless feeling. One feels cornered, as if one had signed over the power of free will and must report for this job without fail no matter what happens. It seems as inevitable and as bewildering as birth or death (or taxes). There are still so many unanswered questions that one is full of apprehension and a kind of dread of the unknown. Add to this the horror many women have of getting into a job for which they are unsuited and of being frozen there for the duration, and perhaps some of the strain is explained. One is left with questions, unimportant but troubling: Should one take lunch or can one go to the cafeteria? If one wears topcoat to cover working clothes, will there be a safe place to check it? Should one take money or is that risky? Where can one find a place for meals at odd times? How often do buses run and how long will it take to get there? etc.

TRAINING AT SWAN ISLAND WELDING SCHOOL

I reported to the school office, was sent to a "check station" near the school to receive my badge, and returned to the office to fill out forms covering past employment experience and educational background. I checked out a hood and steel brush and reported to my instructor in the welding building.

I was taken to a welding booth and started to work. To one unaccustomed to such work, seven hours of welding broken only by a half hour lunch period is a large initial dose. The instructor showed me a machine and explained that black indicated high voltage, red low, and that I would probably use only the high. The amperage dial must be set in corresponding color range. Voltage is the push, amperage the heat. The latter differs with different size rod. Reverse polarity is used with white or grey rod, direct with all other. I was then shown a good working position resting left elbow on knee, steadying right hand with left. I was told how to detach the rod from the plate if it became stuck. I learned how to lessen the weight of the lead by looping it around the right arm. The instructor made one line of welding across the plate, guided my hand while I made one and told me to go ahead and practice. "That's the only way to get it." This I did for two days interrupted only by a safety lecture and a showing of the General Electric motion picture on "Electric Welding". I used bare rod only.

The third day I changed to brown rod and was shown how to pad a plate. The fourth day (under a new instructor) I learned to do a fillet weld with 3 passes of beads. During the morning of the fifth day I did a vertical weld on a flat plate, and over this a vertical weave. In the afternoon I did vertical welds and weaves on a fillet. An hour was taken out for a health lecture. On the sixth day I continued with vertical welds, doing well at first and then becoming less and less successful. The class was shown 4 movies and I found the General Electric ones made far more sense than they had the first time. A number of us wished we could see in print a lot of what was shown rather than trust our memories to tell us which were the signs of too short an arc, too long, too hot, etc. After the movies when I returned to work I managed to get excellent results but was surprised and disappointed to find that this new skill did not carry over the next day (the seventh). In the middle of the morning I switched to work on the test plates and on the morning of the eighth day took and passed my test. For the rest of the day I could, if I wished, try overhead welding. I did for a short time. The rest of the day was consumed by having forms filled out. I was told to report to Ways 4 and to be sure I took my helmet with me. There were no other instructions.

COMMENTS:

For the first week of this work I found I was more tired at night than I could remember ever being, but it was a physical fatigue not the nervous fatigue of the day I applied. My arm muscles were very lame and my hand stiff. Heavy shoes raised welts on the legs of those of us who had never worn high shoes. The hoods made very sore temples. By the end of six days, however, all this was pretty well over. I did not mind the fumes at all, but I had an outside booth. Both light and ventilation were far less satisfactory in the inside booths. We were given no advice on clothing and many of us had flash burns and slag burns on our necks. Our slacks were perforated with small burns and some caught fire and burned sizeable holes. Those who wore low shoes frequently had ankle burns. My glasses were well pitted by slag before the matron in the rest room told me to ask for goggles in the office. We still had many questions unanswered and would have welcomed a chance for class discussion. Many

would have profited by access to printed material. Some even bought text books on welding outside of the school. The safety lectures were helpful, though somewhat repetitious and we might well have been given more specific information on safety as pertaining to welding. Many women have a fear of electricity because they have had no experience with it. Some even thought they might be electrocuted if they welded in the rain.

One toilet for all the women in the group was inadequate, but I heard no one complain. Some instructors suggested that their trainees rest a few minutes in the middle of each half day session. In other classes we welded steadily without a break.

All in all the training seemed to me very sound as far as it went. I feel that what I received could have been concentrated into about five days and that with a few extra days we might have gone further. (See Summary). I commend the practices modeled after shipyard procedure: the checking in and out, the daily picking up of badge, the impersonal attitude of the instructors and the absence of any "coddling" of the women trainees. Excellent standards of shop housekeeping were maintained.

INDUCTION INTO EMPLOYMENT

There was no formal program of induction. The Ways are so large and cover so much ground that one is conscious only of confusion at first. I could not find Checking Station #1 and no one seemed to know its location. After wasting perhaps fifteen minutes, I found it, received a badge, and was turned over to a new welder who knew the Yard from her days as a laborer. We went in quick succession to a shop under one of the Ways for rod boxes, to a lunch room to leave our lunch boxes, to a tool crib for stinger and brush, to a rod shop for rods and glass, and to the Welders Office to be assigned a day off. My guide, perhaps by way of being perverse, took me through the skids to get from one Way to another. I could get no sense of direction out of it, with the result that at night I returned my equipment to Welders Lunch Room 14 but got the wrong Way and found it was the Men's Lunch Room. I traced down the Women's but was five minutes late getting there, so could not get my lunch box. These rooms are supposed to be guarded or locked but the next day, when I returned for my things, gloves, stinger and chipping hammer had been stolen--(a total of about $9.00 worth). By then I had delayed too long and the last bus had left.

At last I climbed some 92 steps to find my leadman who took my name and said he'd try to find me a job. About 45 minutes later, he sent a helper to show me to the "job". The helper told me "You certainly earn your money here just dodging getting killed, there's so much inexperienced help." This was all the welcome or morale building I received. I found later that the Kaiser Company has an excellent safety record. The job was on the poop deck to begin with, and later down on the deck immediately above double bottom. The noise was so great all instructions were given by gesture. In a small room two welders, two shipfitters, a grinder and a chipper were at work. Two men swung heavy sledge hammers at opposite sides of a steel doorjamb. In the middle of it all the lights went out. The noise was excruciating, the air heavy and the whole scene bewildering; a rather stiff beginning after the systematic routine of training. My first task was to lie on the floor and do an overhead tack (which was not in my training), and later to tack in a small space where my rod had to be bent even to reach there. In actual work I probably tacked not more than an hour or two all day. In terms of nervous strain it was worse than a week of work at school.

The second day brought other complications which I had not learned to expect. Totaling the climbs I made from road to deck twice on Ways 3, once on 8 and four times on 7, I climbed almost 500 steps aside from my work. I tacked every minute of the time when I wasn't climbing. Most of it was done kneeling on one knee to support the hand in the manner I had learned at school with the result of exceedingly sore knees at night. I later learned by observation to change positions frequently, and to work with either hand to reduce fatigue. But the height was the main nightmare. At the top step of Ways 7 the flooring ceased but began again around a corner. I was apparently expected to follow my shipfitter who swung under a guard rail, grabbed hold of a post and swung farther to reach the flooring. I did it but it was foolish, risky and unnecessary. After I had done it three times safety men ordered a cat walk with rails. This is part of what a woman feels she must do at first to prove she "can take it". There were a few times when we were urged to swing down from scaffold to scaffold, or climb over the edge of a deck to the deck below or tack on the scaffolding outside the ship with no guard rail between us and space. These are things I feel the company would not condone. Women do not ask favors but it is common sense to recognize that their muscles at first are not strong enough for them to risk the climbing techniques men use. There is always a safer way to get to any spot.

EMPLOYMENT

There are many things to which one must become accustomed in working on the Ways. One must expect to be drenched by rain, chilled by wind, or warmed by the sun and work through it. One must learn to get into almost inaccessible places and weld from almost impossible positions. One must learn to climb handicapped by heavy equipment and the unwieldiness of hood and rod box that throw one off balance. One must get used to height, noise and discomfort. But all of these take time. I find that many other women dreamed as I did some nights of the first week that we were falling off the edge of the ship. This in itself indicates nerve strain. The second week I dreamed four different times that the lights had gone out, that I was seated precariously on a beam or scaffolding high up in mid-air in some tank, and that I mustn't move for fear of falling. If one could draw up a time table it might read something like this:

1 week to overcome fear of height and dread of noise.
2 weeks to develop techniques in climbing and to give time for muscles to develop to meet the stress put upon them.
3 to 4 weeks to develop sufficient skill, and more important still, confidence in that skill, to do the day's work.

In short, at the end of three weeks or a month the job is licked and the fears and apprehensions are under control. But short of that time women may leave because of any one of these things unless we can help meet them. The dread of being asked to do a type of tacking which has not been mastered is one of the worst. I found I shrank from work below decks for two weeks or more merely because I had not learned to do overhead tacking well and working below meant there was an overhead to tack. Once I learned this, I found it suprisingly easy and went to work with real anticipation, not with reluctance. My only regret now is having to leave the Yard. I like the work and shall miss it.

SUMMARY

I do not believe that the difficulty of the work itself is a primary cause for drop-outs among women welders on the Ways. I think that the chief obstacles are six:

1. Strangeness
2. Health
3. Noise
4. Height
5. Climbing
6. Inadequate skill and lack of confidence.

I believe that through training we can meet these six causes of turnover among new workers. We can reduce loss of employees for reasons due to lack of health by more careful selection prior to employment. Through more practical training we can give adequate skill. Through orientation we can prepare women to face the strangeness, the noise, the height and the climbing. Counseling should play a considerable part in this orientation and should do much to break the shock, adjustment and fright reactions. I submit the following suggestions.

SUGGESTIONS

COUNSELING

Counseling should be available to a prospective employee before she has had to make her decisions. She will need advice on:

1. Selection of occupation based upon her adaptability and experience.
2. Obtaining her social security number; and her birth certificate (if she is under 24).
3. Finances: She will be asked the day she makes application to the Union to decide whether she wishes to take out hospitalization and insurance, and how much she will invest in War Bonds. She should know the approximate cost of equipment for her job before she obligates herself for other payments. If necessary she can postpone some commitments.
4. Preparation for the First Day of Training. She should buy the minimum amount of clothing for the job until she has reported for training and received further advice. The necessary items are welding gloves, slacks or overalls and a jacket. She should wear her heaviest shoes and be sure her hair is covered.
   Further advice should cover means of transportation and approximate time needed to get to school; the harmful effect upon a watch of the welding rays; the possible lack of lockers in which to check anything of value. The trainee must wear her work clothes the first day since there may be no place to check street clothes. She must bring her lunch unless the cafeteria is within easy reach.

SELECTION

The very nature of the work on the Ways eliminates the advisability of hiring workers who are subject to respiratory disease; who have weak hearts that might be affected by climbing, or by excessive walking; who have extreme aversion to heights; who are subject to epilepsy. Medical authorities should be consulted for a complete list of causes for rejection.

Neither age nor over-weight seems to be a barrier to good performance in many cases. The basis of decision must rest upon the potentiality of the applicant as a worker not upon any arbitrary specification.

INSTRUCTION

Trainees may receive instruction through practice, through the telling or lecture method and through Exhibits, visual aids and printed matter.

A. Demonstration

The instructors made effective use of demonstration by showing welding methods on many occasions, especially in presenting each new type of welding. More could be done by using demonstrations as the trainees practice.

One instructor used it to correct faulty techniques as he observed them. Another allowed faulty methods to become fixed habits through failure to demonstrate proper procedures when need was shown by trainees.

B. Practice

One of the reasons why workers quit is because they have too little confidence in their skill, dread being asked to do work they think they cannot do, and become so nervous through lack of confidence that all their work suffers. If a worker waits to learn how to do overhead tacking until she is faced with a particularly difficult overhead tack on the ship, she delays production while she learns. I believe that training should more closely approximate the conditions of employment. If the trainee spends her first 5 to 8 days working at a bench learning to pass the test plates, and then gives perhaps five additional days to work on a simulated deck or a mock up bulkhead, she will be ready to earn her $1.20 an hour on the Ways. Training could thus give practice in:

1. Overhead as well as flat, horizontal and vertical tacking.
2. Tacking with a curved rod to reach a comparatively inaccessible spot.
3. Tacking from all sorts of positions, sitting, kneeling, lying, balancing on a ladder, reaching around a pipe, tacking with one hand only, etc.
4. Setting of the exact type or types of machines she will use on the job. Little help is given in this once the worker is on the ship and yet the efficiency of her work depends upon the machine. One cannot do an overhead tack with a cold machine. She should learn to recognize when her machine is too hot or too cold, and adjust it accordingly.
5. Tacking butterflies, "D's", saddles, clamps, dogs, etc. It would not need quantities of material. A saddle once tacked can be knocked off, cut down by the burners and retacked by another trainee.
6. Burning off excess metal. She will be asked to do this on the ship.

C. Related Training

Orientation and practical instruction can be given in related training where the instructors give information and trainee difficulties are revealed in discussion sessions.

1. Safety: The instructor might discuss any caution necessary in working with electricity. Many women, through ignorance of electrical equipment, are afraid of it. Clothing should be discussed and particular mention given to the danger of slag and flash burns. The neck and ears are usually the least protected spots. Emphasize the use of goggles and hard hats. This seems to be no one's responsibility in the yard. Hold a periodic inspection to be sure trainees are properly equipped before releasing them to employment. Check carefully on shoes. Caution concerning kneeling on cold steel. Give information about hood lenses and air pipes for ventilation.

2. Noise: Days differ. One day one may work below decks amid terrific noise: another day above with comparatively little noise. One does get used to it, improbable as that seems. A good precaution is to have cotton in one's pocket to plug the ears.

3. Height, Climbing: Even those who are afraid of high places become accustomed to them within a week. Watch the men when they climb. There is a real technique about it which anyone can develop. Caution trainees not to attempt to do any climbing they feel they cannot safely do. There is always a safer way to reach the same spot.

4. Status of a Woman Worker: Each trainee might well be told the following:

   a. Go into the yard as a worker, not as a woman. Some men will have unpleasant habits. They may curse, they will not offer the courtesies that go with social contacts, they may shove past you, spit upon the decks, fill up the seats in the buses. Others will be most courteous and helpful. But remember you are there because there is a War to win and it's up to you to speed production and let nothing interfere.

   b. You are on your own. The Yard offers excellent facilities but no one has time to be your special guardian. Show initiative. Go after what you need. Lockers are available if you ask at the Craft office. Safety men and First Aid staffs are interested in preventing accidents. Shop stewards and counselors are available to give assistance and advice. Use them. And always when in doubt, ask your Leadman. Your direct line of authority is to him.

   c. Because shipfitters and shipwrights often need tacking and welding done before their work can proceed, you are assigned to "work for them". Do not resent this. You are paid the same wage they receive. This arrangement is simply to speed production.

   d. In direct contradiction to (a) remember that you do go into the yard as a woman to prove whether or not women can "take it". You may have to prove yourself the first few days before you are accepted as a partner in production. On you depends not only your own success, but expanded opportunities for all women.

5. Morale: During training much can be done to build morale. Then is the time to discourage absenteeism. A loyal, satisfied trainee is an excellent source of recruitment of more trainees. Some certificate of recognition might even be awarded to each trainee who furthers production by bringing in one more worker, by maintaining a perfect record of attendance, etc.

6. Nomenclature: Nomenclature can be taught in different ways. Not a great deal is needed but some would be helpful. The new employee who is told to report to Port Tank 4 or Poop deck starboard will be glad she learned the difference.

7. Discussion of Trainee Difficulties: Question and answer sessions with either instructor or trainees asking questions aid in revealing trainee problems. The instructors may find problems of which they had not been aware. Trainees will gain confidence from group contacts which enable them to find how their ideas fit in with those of others.

8. Upgrading: With the increasing numbers of women workers, there is every possibility some may be picked for jobs of increased responsibility. During training is the time to acquaint them with means of upgrading. Tell them about supplementary training and enlist their interest.

D. Visual Aids, Exhibits and Printed Material

Instruction can be advantageously supplemented by the use of motion pictures, charts, exhibits and printed matter. A library of text books and trade journals made available to the more ambitious trainees is suggested. A sample exhibition of clothing and equipment would help. (See page on "Clothing"). Sample welds make the goal of the trainee more tangible.

MISCELLANEOUS

Since the time when I trained, an introductory trip to the Yard has helped new employees tremendously. The Orientation Booklets are another splendid contribution of the Yard and the Training School. In addition to this I wonder if information regarding Unions presented by some representative of the Union during the training period might not be helpful.

Miscellaneous information of special benefit to those strange to the town would be: suggested names of places where meals can be obtained at the hours necessary to make one's shift; names of places where box lunches can be ordered; means of transportation to the Ways by bus or by ferry.

SUGGESTIONS TO THE SHIPYARD MANAGEMENT

May I offer a few suggestions realizing that they are based upon a limited observation of about six weeks? The Yard is to be highly commended on many things. The condition of the wash-rooms is excellent. The liberal provision of drinking water on the Ways is equally fine. The work of the Counselors in Women's Services has made a good beginning and can do a great deal. The prospective nursery will offer splendid service. Launchings, the Shipyard paper, "The Bo's'n's Whistle", the

presentation of Maritime Award pins--all do much for morale. Good morale means pride in employment and is translated into production. Surprisingly little things boost morale. I found that a trip through one of the finished ships made one worker feel "like working harder than ever". Might it be feasible for a leadman to take his crew through? Would recognition of presenteeism over a long period of time help defeat absenteeism? Leadmen or foremen could submit such names without much work. A word of welcome to a new employee from her leadman would do a great deal to build morale. Some of them give this now. Some don't.

New trainees would gain a great deal if they were to report to the woman counselor. She could check them on clothing, insist upon hard hat (this is not at present enforced) and safety shoes. She could advise them not to work in rooms with inadequate ventilation as many of us have because we did not know we could secure air pipes. There is no economy in developing coughs that cause pain with each breath. The counselor could point out the location of rest rooms and lunch rooms. Some of us consumed almost all our lunch period going from Ways 8 to the lunch room to which we were assigned on Ways 1 because we did not realize there were others open to us.

Through foremen and leadmen could men workers be cautioned not to urge women to risk hazard in climbing by precarious means; at any rate not until they have hardened up their muscles and can do so safely. Carelessness causes accidents and there is still some carelessness. Workers toss electric light bulbs to the deck, toss down scrap metal, bolts and screws, butterflies and "D's". Defective leads seem to be no one's responsibility. When we report them to the leadman for whom we work, we are occasionally told to leave them for the next shift, and yet they are a potential cause of fire. I believe the major carelessness exists among the younger, newer workers. The older workers seem to have better work habits.

During my employment in the Yard I saw no evidence to support the occasional rumor that loose morals in the Yard make it an unsafe place for women.

And finally, if the trainee is trained in the fundamentals of welding, if she learns to tack from various position with either hand, if she can set her machine to fit the task, then she should be able to fit into the production scheme. If she is weak in any phase of the work, it would seem a workable idea to send her back to training with a specific order stating what she is to learn. This remedial training is being used by many large companies to advantage.

Well selected women have a great deal to offer. They can be efficient, accurate, steady, loyal workers. We want to do all possible in the training to give maximum time. Production will win this war and production is what counts now.

SAFETY CLOTHING FOR THE WOMAN WELDER

Shoes: Safety toes (steel) and non-skid soles (cord). Should be high enough to protect ankles and waterproof for work in rain.

Slacks; Overalls or coveralls: Should be of hard surfaced material. Heavy blue denim or similar material is satisfactory. Dark colors are preferable. Overalls with loop for hammer are convenient. Overalls and slacks permit frequent change of

Shirt: which should be a man's shirt or one very similar. Neck should be high and buttoned to protect from burns.

Jacket: A wind and water repellent jacket for warmth is practical.

Underwear: Long underwear gives warmth and absorbs moisture. It has been found to be very satisfactory.

Gloves: Gloves must be heavy gauntlet type.

Goggles: Must be approved safety goggles with side protection from flash. These are furnished by the Yards.

Head Covering: That gives the best protection is the leather hat with flare to protect neck. The hood does not skid on the leather as it sometimes does over a bandanna or smooth surface cap.

Hood: Two types are available, one with hinged door for swinging dark glass up and leaving protection of white glass. The other without hinged window. The latter is usually narrower and lighter.

Leathers: Half trousers of the split apron type belted behind the leg are cooler. The full leather trouser offers more protection and more weight and stiffness. A high necked leather jacket gives adequate protection. The practical jacket consisting of neck covering and sleeves gives less.

Socks: An exhibit of these long, heavy socks--cotton or wool--and various types of clothing would be a big help to the trainee who must decide what to buy.

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1/31/43

Shipbuilding

The following are high points from Mrs. Wright's report of her recent visit to the Todd Shipbuilding Company. In the New York City office she met Mrs. Herrick's assistant, Miss Sawyer and at the Hoboken yard, Miss Ekstrand.

Miss Sawyer said that at S. Portland the absenteeism and turnover are both increasingly bad. Mrs. Herrick is apparently spending all her time there. Miss Sawyer referred to the situation there as dynamite with the CIO and A F of L at each other's throats. Good weather has brought a worse attendance record than that of the winter. They think it may be due to the fact that there is no great financial urge since the workers have more money than ever in their lives before. A more likely explanation is that the workers are spending part time on their farms raising food and laying it by for the winter. Maine farmers have never cared a great deal about money but they are accustomed to be well provisioned. It seems that the S. Portland yard has had many difficulties and that there have been few if any improvements since our visit. There are still only the same inadequate provisions for medical care.

At the Tacoma Yard, a woman who went out from New York in February has already hired 1,400 women with apparent success. At the Galverston Yard where there was some reluctance to put on women on the harder jobs, Miss Sawyer advised that they hold their noses and take the plunge at once on the worst possible phases of the use of women so that if they were not successful they could ask for the deferment of men for those jobs on the grounds that women had been tried on those jobs unsuccessfully. The use of women on all jobs was sold to the union on that basis. Physical examinations are permitted by the union in Galveston and records are kept by the company.

In Houston, there is what Miss Sawyer considers an ideal set up for the introduction of women. The upper yard is a miniature of the lower yard. Women can begin in the upper yard and when they have acquired skill can go into the larger, noisy, busy lower yard with better chances of success. There women will be worked in gradually.

The Tacoma Yard is closed shop and no physical examinations are permitted by the union.

In Hoboken, a crew of women welders, under a woman who learned welding in the last war and has been welding ever since, has recently been put at work on the second deck of a Navy ship conversion job.

Todd-Hoboken

(8,000 total employees. 140 women in yard operations)

Hours: Women 5 days a week on the day shift only - 7 a.m. 6 p.m.

Rest periods: Women only have 15 minutes in each half shift when they go to the rest room which is well equipped with leatherette couch and easy chairs with footstools. It adjoins the locker and toilet rooms.

Training:

Two women have been hired to start training as caulkers, to Miss Ekstrand's delight. They will be given 200 hours training in the school where a practice jog is set up on which the boards can be loosened at will, and the position changed to duplicate any slant found on a boat. There is also a sample of deck caulking. The oakum and the strands of cotton must be untwisted and hammered home between the boards with a chisel and mallet (weight 3 to 5 lbs.) The head of the mallet is possibly 8 inches long. The movement required is in the wrist. Part of the caulking on the hull is done by two workers. One holds the bousing iron in place. The other swings the 8 to 15 pound beetle (large mallet) to give it a resounding blow to drive the caulking home. It will take husky women to keep up that work ten hours a day. When trained they will work on barges, submarine chasers, lighters, and tug boats. Experienced men are required for caulking life boats where the seams are smaller.

Miss Ekstrand seems eager to have women on all possible jobs. When a girl in the machine shop said she operated a 2-inch lathe and she thought some of the biggest lathes (old and size unknown) would be too heavy for her to operate, Miss Ekstrand said to her, "Never say any job is too heavy for a woman."

Miss Sawyer said her reports show that this yard has women on a greater variety of jobs than any other Todd yard.

The use of women on board ship was so unsatisfactory at first that it was abandoned. Apparently supervision was not adequate. The new plan to use women on board ships is to keep them in groups working together under a woman leader. Katherine, the 52-year old welder already referred to, is the only one of these so far. She will probably eventually be rated a snapper though now she is doing snapper's work without that rating. Miss Ekstrand tells the girls that they are on board ship only on trial and it is up to them to make good. That the men do not take too favorably to having the women work on board ship might be inferred from the whistles and cat calls coming from a neighboring ship as our group of four females went aboard the Navy ship to see the girls at work. At no other time did our presence in the yard cause any apparent comment or attention.

The publicity about a colored woman at Hoboken doing chipping was apparently a mistake as they have not had a woman on chipping nor is that contemplated.

Keep together
This material
prepared for
Kathleen McLaughlin
of New York Times

Description of safety clothing worn by women in three establishments.

Plant No. 5

Uniforms recently adopted - dark blue onepiece coverall, ($4.00) snaps at ankles so can be fitted tight for certain jobs; long tight sleeves - some bought other clothing previously and are allowed to wear it. Some workers had several layers of clothing as well as long underwear under coveralls - working in the open. Hard hats are provided when needed; all workers on ways and platens wearing these. Welders must furnish own jackets ($10.00) and gloves ($2.00). Welders asked to wear boots covering ankles. Shoes with reinforced toes are required. Difficult to get all the desirable equipment. Safety engineer says he doesn't believe hard hats necessary on all burning and welding jobs. Company is trying to get some type of standard wool head covering.

Plant No. 10

No uniform required but "suitable clothing" of slacks or coveralls - cuffless coveralls, jumperalls or slacks with flat hip pockets are required. Blouses with sleeves, close fitting at wrists (if full length) and with sleeves without reinforcing (if short lengths) kept tucked inside at waist. Shoes with medium or low heels and closed toes. Safety shoes with reinforced vamps are recommended where weighty material is handled. Wooden soles are recommended where acids or conditions of excessive moisture and heat exist. Berets, caps, turbans, nets or kerchiefs with snug but not tight fit are required and must confine the hair completely. If brimmed or visor must be of non-inflammable material and stiff enough to act as a warning when striking machinery. If of net must be closely woven. Gloves when necessary, and of washable, non-irritating, non-inflammable material.

Goggles required where necessary, i. e., grinding, chipping, welding, scaling, riveting, drilling at high levels, machining rough cuts, and while handling molten metals or chemicals in open containers. Company provides welder's goggles - Few goggles seen except on cutters. Women in structural shop welding wear shields but no goggles. Goggles are received only a few hundred at a time when they have thousands on order. The cup type goggles which they have, so limit vision, that they are a hazard on scaffolding and no spectacle type goggles are available.

Plant No. 17

Not required to wear uniforms, but must wear safety clothing suited to the job. Slacks for those in the yard. Hair covered - heavy hair net and various kinds of caps. Wearing two kinds of suits - tan butcher boy type jacket, open in front, and slightly fitted, with a peplum in back covering the hips; short sleeves - made of medium khaki or denim; slacks - legs narrowed at bottom. The other is dark blue coverall with narrow belt and long sleeves - medium denim, visor cap. Flat heeled, closed toe, heavy shoes. Free gloves where needed. Welder's shield planned by company - two pieces of heavy canvas and stitched in or quilted between are pieces of imitation leather to keep heat from face. In a slot about size to cover eyes are put 3 pieces of glass - 1 colored and 2 plain to keep heat from eyes. This slot has a glove button on it, so glass can be removed and put in. This is used when there is not enough room for usual welder's shield. Knee pads also provided, made of imitation leather, padded with a cotton or wool mixture, padding made on the order of football knee pads. (No women welders as yet).

Goggles furnished when needed.

Description of the "yards" and "ships" in selected shipyards.

Plant No. 18 (Poor conditions)

On the boats in outfitting docks, many workers were crowded on each boat (in fact some question has been raised as to whether there are not too many workers on each boat). There is an appearance of general confusion and walking must be done carefully, even on the top decks because of the many pipes and valves which are found on a tanker. Also, on boats it is very likely to be true that welders' lines are strewn around everywhere. Climbing up and down long ladders is required to get into the fuel tanks to do welding and to do various other types of work in the boats. For a time the ladders are temporary wooden structures.

Plant No. 22 (Good conditions)

This is the most compact yard that agent has seen, and if there are railroad tracks, they are on the outskirts of the yard and not where the workers are going about. There is not the activity in this yard that has been seen in the other yards. There are some cranes, but these are very near the ships or in the shop, whereas in other yards they are about in many places in the yard. Much of the yard is hard surfaced and so there is not the dust when the wind blows. Roads are wide and well laid out. There is not so much material in the yard, and this is neatly stacked.

The shops are small and as a great part of the work is done on the ships, the shops seem rather inactive. The shops are neat and orderly with wide aisles. The workers are well placed and there was no crowding. As agent observed, the machines seemed well guarded, and noticed no unsafe machine.

Plant No. 23. (Good conditions)

There is much activity in this yard, many railroad tracks, switching cars back and forth, and the vehicular traffic that goes with a busy yard. In addition to this traffic, there are numerous cranes with their heavy overhead loads. (At time agent was in the yard it was very windy, a crane took a large piece of steel up, but had to put it down again, as the wind was blowing it so hard that moving it was too dangerous.) There is no boundary line for pedestrian and vehicular traffic but all are taught to observe safety rules and so the danger is lessened. The roads are wide and well laid out.

This yard is not hard surfaced and as the ground is bare it was dusty and especially so when the wind blew. Material is stacked over the yard in orderly fashion.

Shops are new and patterned after like shops in other yards of company; seem to be well planned and are not crowded. Aisles are wide and not obstructed. No slippery floors seen.

S.y.a.-1	Phila —	Gas furnace operating
S.y.b.-1	" —	Shiploft work
S.y.c.3	Calif.-Marinship)	Shipfitter
S.y.d.-1	Todd	Mortice machine
2		Band saw cutting
3		Drill press - in copper shop -
4		Crane
6		Checking shiploft model
7		Splicing rope
8		Drill press - machine shop -
9		Turret lathe
10		Tool room worker sharpening a saw
11		Checking burner in boiler room
12		Welder
13		Bolt cutting machine
14		Burners
S.y.	Phila Navy Yard —	Gas burning
S.y.	N.P. -	Shiploft work
S.y.g.-	Mare Island -	Tool house

MISCELLANEOUS EXCERPTS FROM SCHEDULES

Crane operators in a company where women operate overhead cranes from 30 to 100 ton (inside) and expects soon to put girls on transverse cranes in the yard. In this company the following comment was made by and official:

> "We have had girls on cranes for about 6 weeks. They are doing very well. There seems to be something about it that is particularly adaptable to women. They are very careful - not so fast, but that will come in time. The average time taken to train a girl on crane operating is 4 weeks, but one of our best was trained in 4 days. After 4 days, the man came down and said she can do as well as I can. There's nothing more to teach her, and from then on she has operated alone. A crane operator needs to have average intelligence and an even temperament - couldn't use a person who is nervous or scared."

Comment of official in another yard -

> "I believe the best workers we have are the young married girls with husbands in the armed forces. They have no home and they keep right after it." He also said an especially good worker is a former textile mill worker. "She never stops, never complains, and you wouldn't know she was in the shop."

General plant practices for women productive employees in the Women's Bureau Eastern Coast Ship-yard Survey

Pay for the job - no sex differential; 7 percent increase over base rate for second and third shift.

In over one-half the yards, women work on three shifts; however two-thirds or more of the total women force are on the first shift, and usually 10 percent or less on the "graveyard."

Lunch period of at least 30 minutes.

Work week of 6-8-48 (Two yards employed women 7 days, and 1 - 5 days.)

No regulation for uniforms, but special type of safety clothing. Goggles where needed, hair completely covered, heavy flat heeled shoes, with covered toes, no jewelry.

INDUCTION OF WOMEN IN AN ATLANTIC COAST Shipyard

(Notes from Women's Bureau Schedules)

The induction of the women in shipyards seems to have been made very carefully in some instances. In one comapny women have been employed but two months. This shipyard has a long tradition in shipbuilding and employing many of the same families who have grown up in shipyard work. In hiring women, preference is given to relatives of the men employed. This yard has a waiting list of thousands of women applicants. The Company made every effort to build up confidence in the women by giving them equal pay for equal work, as they felt it would be poor psychology to pay them less than men. It would make them feel inferior to the men and they would think that they were not expected to do as well as the men. The women were put at once on men's complicated jobs purposely, as the Company feels that if women were given the menial jobs it would give them an inferiority complex. Also as menial jobs are easiest to fill, they are therefore using women to their utmost abilities, following the above policy.

The Company has promised all men that if a woman takes over a man's job he will be given an equally good or better job with the result that the men have spared neither time nor effort in training the women. Otherwise it would have been very hard for the women to learn the work. Jobs of Negro men are given only to Negro women.

The Company has not been in a hurry to train women as welders as when they begin they will necessarily be given the lighter welding tasks, those on which men make the most money through piece work. The Company is very conservative and women are not on the ships as they consider the holds too big, too far removed with too many pitfalls on the ships. They are very proud of the fact that men have shown no resentment to the women, who for the most part, are wives, daughters and other relatives of the men already employed in the yards. This is one of the largest yards reported to date by Women's Bureau agent.

A smaller yard in another port reports that they tried not to make an issue of the employment of women, and their men have been exceptionally understanding and their attitude and reaction has been very good. The men are willing to stop and explain the work in detail, giving the women the benefit of all they know about her job. They have been very particular to hire a high type of women.

I. Location - a shipyard on the North Atlantic Coast.

II. Product - Submarines - ships are completely fitted and finished here; certain parts as motors, engines, batteries are made elsewhere and installed here. Officers who are to command the submarines are stationed here during construction and know their ship literally inside out. (The first submarine machine shop was developed here by John Holland, "the father of submarines" in 1898.)

III. Number of women employed:
Over 500 on production.
About 300 clerical workers.
Expect by September 1943, to add about 2,500 yard workers, may have to be women.

IV. Requirements for employment and training.
"We hire workers, not men nor women, married or single (do not go into that) colored or white." All inexperienced are sent to State vocational school and are paid 70 cents an hour and have an 8-hour day. Welders get 250 hours training; machinists, sheet metal workers, and ship-fitters get 144 hours.

V. Turnover, less than 1 percent but are constantly trying to reduce it.

Absenteeism - About one-half of what it is for the industry as a whole. Try to investigate excuses. Every effort is made to keep up production. Posters and large signs made by the man who did the New York Central Station murals are about the yard. A large submarine marked "For Hirohito" is outlined on a board in the yard and the hours of absenteeism are being marked off, so that when enough hours have been lost to complete a submarine, they consider they have built a submarine for the Jap. At the head of each ways, there is a large sign marking the progress of building that ship. The progress each week is marked up. A figure representing "Uncle Sam" is at the top. If progress, is ahead of schedule, he is tipping his hat to the workers, if just on schedule, he is erect, if below schedule, he is frowning.

VI. Hours of Work. - The yard is on a round the clock schedule, 8 hours a day, 6 days per week. Nearly three-fourths of the women are on the first shift - 7.15 a. m. to 3.15 p. m. and less than 6 percent on the graveyard shift, from 11.15 p. m. - 7.15. a. m. When there is a rush of work as fitting and finishing a ship, women occasionally work 7ddays. Whenever the women work over 48 hours, they have to get special pemission each time from State Labor Department.

VII. There is absolutely pay-for-the-job policy in the yard with no sex differential. All new learners are paid at the rate of 70 cents per hour for a probationary period of one work month, then in accordance with merit increased to not less than 75 cents per hour. The hourly rates for experienced women workers range according to the job, from helpers 91 cents and $1 to welders $1.11, $1.20, $1.27.

VIII. Women's jobs. This company has three yards each one repeating the activities of the other. This is so that as much water frontage as possible can be utilized and the ways may be accessible to the shops and yards getting out work for the ships. Women are working in all three yards - chiefly in the machine shops, sheet metal shops, ship fitting department and as electrician's helpers.

About one-fifth of the women on production are burners and welders in various departments both tack welding and welding of various parts.

60 girls were in the "Outside Electrician's" department making the hangers for putting up the wires and cables, assemblying various parts, and helping to install the wiring in the ships.

In ship-fitting, girls work as helpers to lay-out men and also make templates of paste board to fit certain parts of the ship after it is on the ways.

Riggers - several women work in the loft sewing canvas for various covers.

Machine shops - nearly 40 percent of the girls in the machine shops are working on inspection (using micrometers) and on hand assembly work. They are also working on drill presses, gear cutting machines, on milling machines, lathes, turret lathes, and one girl is doing an excellent job on an engine lathe, turning bevel gears and of course there are tool crib attendants.

Sheet metal shop - Here the girls are helping the men lay out the work on sheet metals from templates, are operating presses fabricating sheet metal cooking pans, and galvanized metal ventilating boxes, etc. They are also doing welding in this department.

Foundry - women are used here now only in the tool room, giving out tools. They will be employed as core-makers and as pipe-fitters' helpers soon.

Mold Loft. - Two women are employed here making final tracings on cloth of the final pencil drawings of parts, etc., from which all blueprints are made. The foreman said the girls had been very satisfactory, did excellent work and were taking over more and more all the time.

IX. Safety Clothing. - Women are not required to wear a uniform costume but are required to wear clothing meeting safety requirements:

Hair must be completely confined by a cap - no bandannas, scarfs, nets, or snoods while working at or near moving machinery or in the vicinity of welding operation. Dark blue ~~gin~~ caps of acceptable type may be purchased from the matrons for 72 cents each. Leather aviators' helmets are recommended for welders.

Shoes of sturdy material, low heels, closed toes.
No jewelry.
Goggles must be worn wherever danger to eyes from welding arcs of flying particles of metal

Either one-piece cover-alls or two-piece slack and shirt outfits of suitable material - dark blue denim and twill seem most suitable - sweaters, jackets, or coats may not be worn over work clothes. Short cuffless sleeves preferred for working near moving machinery.

Regulations for Work on Boats.

Long coats may not be worn on boats; hip length jackets are acceptable.

Hard helmets and gloves must be worn at all times, hair should be completely covered by helmet.

Shoes covering ankles - boys' or men's shoes are recommended - in no case narrow, or high heels.

Welders have to buy leather jackets and trousers, (cost $16); are furnished helmets, goggles, and gloves by company.

X. Medical facilities - Women have preemployment examination. A splendidly equipped hospital at each of three yards. Nurses on 24-hour duty, and company doctor.

XI. Food Service - Food provisions within the yards are very good - a canteen serves complete hot meal for 50 cents. Also have numerous food booths at points convenient for both inside and outside workers; serving coffee, sandwiches, soft drinks.

XII. General Comments - General working conditions throughout the yard seemed excellent; rest rooms and toilet facilities were adequate and clean. There was an unusual amount of interest in the welfare and morale of the workers.

ADDITIONAL JOBS SUGGESTED FOR WOMEN IN SHIPBUILDING

Plate shop: buffing and polishing

Paint shop: brush painting, spray painting, staining, puttying, removing paint, etc.

Rivet heaters
Rivet passers

Electrical shop: armature and coil winding; wiring; repairing and assembling switchboards; soldering, insulating field coils and transformers.

Machine shop: lathes, milling machines, grinding machines, drill presses, shapers, profilers, broaches, automatic screw machines, gear cutters, thread millers and nibblers.

Tool room: machine tool operations on reamers, cutters, end mills, fixtures, gages, etc., operating drills, millers, grinders, shapers, lathes, planers and slotters.

Tool grinding

Bench work of filing, burring, lapping, etc.

Sheet metal shops: spot welding, soldering, riveting, drilling, operating shears, brakes and punch presses; and light assembly operations on metal lockers, boxes, shelves, etc.

Pipe and copper shop: helpers to coppersmiths and pipefitters on light work

Power hacksaw operator
Pipe bending and threading
Drill press operator
Solderer

Boiler shop: Operating drill presses, shears, and punch presses, and doing light riveting.

Boat and joiner shop: Woodworking machines (planers, routers, shapers, lathes
Band saws and drum sanders
Nailing and gluing wooden parts
Caulking small boats

Draftsmen and Tracers

WOMEN IN PERSONNEL AND SUPERVISORY POSITIONS

IN SHIPYARDS

Todd Shipyard Corporation, Brooklyn, N.Y.
Mrs. Elinore Herrick, personnel director for all Todd yards in U.S.

Todd Erie Basin, Brooklyn, Miss Margaret Sawyer
Todd yard, Hoboken, NJ, Miss Eckstrand
Todd-Bath Iron Shipbuilding Corp., Portland, Maine, Mrs. Phyllis St. Clair Fraser
and others

Richmond Shipyards (Kaiser Co.), Richmond Calif.
Miss Sarah Rehling, women's coordinator, Labor Relations Dept.
and women counselors in all the yards at Richmond are under her

Moore Drydock Co., Oakland, Calif.
West Yard, Mrs. Helen Becher, counselor for women
East Yard, Miss Heanne Butcher, counselor for women

Pacific Bridge Co., Alameda Calif.
Yard #2, Mrs. Mabel Peterson, women's counselor

Marin Shipbuilding Corporation, Sausalito, Calif.
Mrs. Marion Anderton, recruiting; Miss Ethel McCarthy, coordinator in training division

Mare Island Navy Yard, San Francisco
Mrs. Addie B. Bishop, industrial relations and Personnel Asst.
coordinator between the women, the masters in the shops, and the Navy

Brunswick Marine Construction Co., Brunswick, Ga.
Mrs. Mary W. Powell, supervisor of women

Missouri Valley Bridge & Iron Co., Shipbuilding Division, Evansville, Ind.
Miss Ruth M. Mustlitz, personnel director (Evansville shipyard)

Seattle-Tacoma Shipbuilding Corporation, Seattle, Wash.
Miss Rachel Storer, women's counselor

Commercial Iron Works, Portland, Ore.,
Miss Vesta Bradley, ~~in charge of women~~ shipwrights counsellor, women's division, in this shipyard
(the only completely covered shipyard on the west coast [and therefore women employees could be used extensively])

. Steel Corporation Subsidiaries
nington, D.C.

FOR RELEASE IN MORNING PAPERS, WEDNESDAY, JANUARY 10

A total of 40,000 women now are employed by United States Steel Corporation and its subsidiaries, U. S. Steel News disclosed in its January issue released today. Fifteen thousand are in office occupations and 25,000 directly engaged in production.

The January issue of the employe magazine is dedicated to the "All American" girls who have entered the steel industry to fill the places vacated by brothers, husbands or sweethearts in the armed forces. Photographs of over a hundred girls are shown.

Speaking of contributions of women employes to U. S. Steel's production achievements, Irving S. Olds, Chairman of the Board of Directors, said, "Women have played an increasingly important part in steel production since the beginning of the national emergency. Before Pearl Harbor, steelmaking was considered a trade for men, and most of the women employed in the industry were in clerical positions. Today, however, they are doing excellent work in mill jobs and are to be congratulated for their part in producing steel for victory."

Typical of the women employes is the "cover girl," Sophie Wolansky, a machine operator in the tool room of the Ordnance Department, of the Farrell, Pennsylvania, works of Carnegie-Illinois Steel Corporation, U. S. Steel subsidiary. Miss Wolansky started at the plant in 1943, when her brother Max, a machine operator, left to enter the Army. Today she operates many of the same machines that he did. Miss Wolansky has four brothers in the Armed Services and a fifth is preparing to go.

-oOo-

Miss Spring

Jour copy

WAR MANPOWER COMMISSION

Division of Operations -- Women's Program

EMPLOYMENT OF WOMEN IN SHIPYARDS

Part I. An Outline of the Steps Taken to Employ Women as Submitted by a Major Shipbuilding Company in this Country.

The following report is the approach to the employment of women by a major shipbuilding company which has been worked out and is now in operation. The name of the company is withheld, but it is thought that the outline can be of considerable assistance to Regional Manpower Directors and Area Manpower Directors where the shipbuilding industry is located.

This is Todd

The extent to which women can be used or will be used in the shipbuilding industry has not yet been determined, but where labor shortages are apparent or impending, the initial approach to the employment of women in shipyards must be taken by management and with the assistance of the Area and Regional Manpower Directors.

The following is quoted almost in its entirety as submitted by the particular shipbuilding company after conference with representatives of the Maritime Commission, War Manpower Commission, and Women's Bureau of the U. S. Department of Labor.

* * * *

PREAMBLE

Every problem connected with the employment of women in shipyards seems to be a "novel" problem - for example - toilets. The following report is based upon a brief and limited experience with all of these novel problems and probably a million more that have not yet come to light. It must be recognized from the outset that shipyard work is so different from factory work and workplaces that the ordinary State rules for factory employment conditions do not fit. A ship repair yard differs markedly from a new construction yard. Nevertheless, it is the intention to make working conditions in the yards of either type approach the ideal as closely as is consistent with the actual conditions in the yard, the limitations of space, the pressure of the present war emergency, etc. A ship repair yard has none of the elements of a modern assembly line plant. This fundamental difference has its impact on the problems of feeding, rest periods, clothing and - toilets.

In the beginning, this company attempted to do the most important things first and to regard the employment of the first group of 125 women as experimental - not only for the women employed in the yards, but for the company officials, the foremen and the men workers in the yard.

WOMEN'S FACILITIES

A new personnel building is to be constructed which will contain locker and toilet rooms* for approximately 1200 women; cafeteria; additional space for interviewing applicants; employment records; first aid and medical examinations. Pending completion of the above building, temporary facilities have been provided to accomodate a limited number of women workers for yard employment. It should be understood the cafeteria and additional space for Personnel offices as well as extended First Aid facilities to be afforded by the new building will be for men and women both.

Present Temporary Facilities for Approximately 125-150 Women

A. Personnel Building

1. Locker Room with individual lockers, benches, mirrors
   (a) Two (2) Bradley Handbowls
   (b) Four (4) Showers
   (c) Toilet Room: three (3) toilets with partitions and doors, tiled part way up the walls.

**2. Rest Room equipped with lounge chairs and ottomans, two couches, sisal rug, coffee tables, smoking equipment, lamps and mirror.

3. Lunch Room. When the kitchen stove arrives, the company will be able to serve a blue plate luncheon, coffee, milk, ice cream and fruits. Seating capacity sixty-six (66) at one time. This will be used on a four-sitting plan and will serve all women employees -- yard and office -- until the new cafeteria is in operation. It will be run by a concessionaire who will later handle the large cafeteria and all feeding in the yard. The Company will control price, size of portions and quality of food, and the contract will limit profits and provide for and independent audit of books.

B. Yard Facilities

1. Present Facilities

Three toilets in Training School
Ten toilets in building "J"
Two toilets in conference and laboratory building
Two toilets in industrial building

Seventeen (17) TOTAL

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* The facilities of the New Personnel Building, plus those located in convenient places throughout the yard, it is estimated will give an average of one toilet to every fifteen women.

** It is recognized that elaborate facilities are not essential, particularly in view of increasing difficulty to secure furniture. The emphasis is for sufficient facilities for rest room toilets, and lunch services.

2. Inadequacy of present facilities

Since the women will sometimes be working out of doors and sometimes the same women will be working indoors, the "inadequacies" are not so serious as they would be if it were a factory type of operation. Since most of the women will not have fixed stations for work either daily or weekly, it has seemed best to develop more than adequate facilities in the new personnel building and allow the women sufficient time to get to it. However, although the present 17 toilets are located so that they are moderately convenient to all the anticipated work areas for the women, it is realized that the situation is not ideal.

Specific inadequacies are:

(a) There must be toilet facilities in the machine shop as this shop at least approximates factory work conditions. Under State law, women should have toilets inside their work place. Until plans for increasing the size of the machine shop are completed, it may not be possible to put in additional toilets in this shop, but it will be done as soon as possible.

*(b) Facilities need to be located nearer some of the work places such as tin and copper shops and mold loft.

C. Office Workers

* 1. Personnel Building (present)

(a) 2 toilets in separate rooms, insufficient in number.
1 small rest room no couch but deck chairs.
2 handbowls in each toilet room.
(b) cloth roller towels, automatic - should be paper or have more cloth towels.

* 2. Office Building
6 toilets, adequate for 33 persons now employed, but rest room and toilet facilities should really be improved.

D. Cleaning of Rest Rooms and Toilets

Charwomen now hired by Outside Yard Construction Foreman. Should be some informal liaison between latter and Head Matron, who is responsible to Women's Personnel Officer as special problems of cleanliness may arise.

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* These matters receiving continuous planning for improvement.

SAFETY EQUIPMENT

Every attempt is being made to use all that the management has learned about the hazards and various occupational disabilities that occur in shipyard work, but it is realized that women present special problems in this regard. The same things are being used for women that have proved safe for men, making such necessary changes as will make the equipment usable for women. Already changes have been necessary in the first set of equipment, i.e., blue denim is not good for welders' uniforms, though not one knew that before. Also, there was a change from the bib-type overall to a coverall.

TENTATIVE PLAN FOR SUPPLYING SAFETY EQUIPMENT AND STANDARD SAFETY CLOTHING

A. Supplied by Company

		Price	Deposit Refundable
Helmet		$ 2.94	$1.50
Goggles	(Approx.)	1.50	1.00
Welder's Shield		5.20	
Respirator		3.75	
	Total	$12.39	

B. Special Welder's and Burner's Equipment

The training period is only four (4) hours a day, five (5) days a week. The maximum earnings for this period, therefore, are $16.40. It has been decided that the company will supply the welder's equipment to trainees without cost, each woman to sign a receipt for same, and at the end of the training period when she goes into the full production schedule she will be required to purchase her equipment on a weekly instalment basis of four (4) payments at the rate of $4.62 per week. This sum will be deducted from her pay of $37.60 for a 48-hour week.

Equipment *	Price
Leather jacket	$ 7.80
Leather dungarees	7.50
Mitts	1.17
Spats	2.00
TOTAL	$18.47

* This is all specially treated and fire resistant.

C. Standard Safety Clothing

Shoes - $3.99. To be purchased by employees at cost from Company store room.

The first selection of uniforms was a failure; they were too inflammable. The girls are being sent to the Army-Navy stores near by to buy woolen khaki pants and blouses which cost about $1.00 for pants and 50¢ for shirts. Arrangements also must be made as to how to handle equipment purchased and turned back in relatively good condition by persons who quit.

Miscellaneous

Wool socks and hand creams will be sold at cost in the stores. The women can send their clothes to the commercial laundry which now services the men and for which they pay.

On safety goggles, the company secures lenses ground to the individual's prescription upon request, and sells them at the minimum cost.

NOTE: What are the job hazards?

The company knows it is necessary to use a respirator when working on galvanized metal or on surfaces painted with red lead. Frequent blood counts will be taken to check on lead poisoning. Signs of zinc poisoning will be watched for. Aside from accidents what other hazards or occupational diseases should the company be on guard against? Data on these problems is being secured from various Government and private sources.

MEDICAL PROBLEM

A woman physician has been employed and registered nurses to handle the pre-employment physical examinations. Vision is tested by an eye specialist now employed for men. The nurses help also in the First Aid which is used jointly by men and women. An examination is being given that is as complete as that for the WAACS and WAVES and in some respects more thorough, for example, an X-ray of the lungs. The items being covered are as follows:

Height
Weight
Surgical and medical histories
Eyes
Teeth
Tonsils
Inner ear for balance at heights
Hearing where indicated
Epilepsy
Breasts
Heart
Blood pressure
Spinal curvatures
Chest X-ray
Obstetrical history with pelvic examination where needed
Appendix
Venereal diseases
Hemoglobin
Red blood count
Varicose veins
Arches
Feet
Urinalysis - over 40 group

From the outset complete medical records will be kept with periodic check-ups. The company should be able ultimately to submit a medical record which will be valuable in industrial hygiene, showing the effects of fatigue, how to counteract it, the effects of particular jobs on health. The purpose of such records and physical examinations is to enable the shifting of women to other work at the first sign of harmful occupational effects. This system will, of course, reduce compensation insurance risks as well as aiding production and lowering the cost of training which might otherwise be wasted.

EMPLOYMENT POLICY AND STAFF AT THE YARD

Selection of the right type of woman for the particular job is only the first step. She must be followed up during the training period and on the job to ensure -

a) Maximum production
b) Good morale in the yard
c) Maintaining good physical condition to lessen absenteeism

In selecting the staff, from the chief personnel officer down to the rest room matron, an integrated program must be visualized. For example, the field representative will check the company's selection by following the employee's production record through the training period and at regular intervals thereafter with the shop foremen.

The entire personnel staff is well aware that theirs is a service job; that selection is from the standpoint of employing women who have the qualifications and meet the standards which have been worked out with the yard management; that service also embraces the responsibility for the welfare of the individual, not alone from the individual's standpoint but also because physically well women, happily adjusted to their jobs mean a stable labor force.

Labor Supply

All applications are being acknowledged and delay in calling in for interview explained. In 6 weeks or 2 months, those who have not been called in will receive a second letter to keep their interest alive and maintain good will toward the organization.

Eligibility

1. United States citizenship with documentary proof.
2. Age span - 21 to 45.
3. No women with dependents or children under 14 living at home, who otherwise would be uncared for.
4. If presently employed in a war production plant, applicant must submit release from present employer.

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* The status of so-called "friendly aliens" is to be clarified with the proper Government agencies.

5. High school education required, with specialized training or experience desirable.
6. A woman must not be more than 25% overweight in relation to her height.
7. All applicants should live within reasonable transportation distance from the plant.

"Fair Employment Practices" Policy

The first group hired contained a ratio of 10 per cent colored to white, and it is this firm's intention to maintain that ratio as a minimum. Other minority groups are being handled in the same manner. There is no segregation of colored from white, either at work or in rest and toilet rooms.

Induction Procedure Covers:

1. Introductory explanation of job opportunities and disagreeable features by Personnel Director.
2. * Securing proof of citizenship.
3. Interview to rate ability and quality of applicant and determine job placement.
4. Physical examination.
5. Pre-employment record completed, photograph and temporary badge issued.
6. Applicant then sent to Coast Guard Office for pass and fingerprinting.
7. Applicant returns to Personnel Office where all employment data are collected and final card issued.
8. Receives copy of Union contract and Retirement Plan.
9. Receives Safety Equipment and Explanation of Use.
10. Group taken on tour of yard, giving them chance to change their minds. Introduced to foreman in shop where she is to work or to foreman of training school. Safety Engineers to accompany group and point out chances for accidents.
11. Attends special lecture in Rest Room on safety.

Training School

This program is under the general supervision of a Marine Engineering expert. There is a separate building for training classes on Welder, Burner, Shipfitting, Sheet Metal work and Electrical jobs. Machine shop operations and some electrical operations, as well as certain training in other shops, is done on the job with teachers under the immediate direction of the foreman.

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* The status of so-called "friendly aliens" is to be clarified with the proper Government agencies.

The training program also emphasizes safety on the job; uses motion pictures; handbooks prepared for shipyard practice; special lectures.

In addition, the women employees are receiving special safety instruction in the rest room from a member of the Safety Department on how to walk properly, stand properly, and lift weights to reduce fatigue and eliminate strain. These lectures are given once a week through the training period of 4 - 8 weeks. Thereafter, the women will be brought together once a month for a safety class. This firm is also studying how the rest period can be utilized for exercises to reduce fatigue in specific jobs, and how to make the transition from the customary light-weight high-heeled shoe to the heavy-weight, metal-capped, low-heeled shoe used in the yard less difficult.

Wage Policy

Women will receive the same wages as men for same work performed. The starting rate or minimum is 82¢ an hour. Advancement will be made on the same schedule contained in the union contract. Similarly, a woman claiming a skill will be given a test and if passed she will immediately go to the higher rate commensurate with her skill. For example, one woman was put on after a test at the rate of $1.09 an hour as provided in the union contract.

Hours

At present the women are being employed for 48 hours a week, 8 hours daily for 6 days. However, the men work 10 hours a day and in some jobs it will be necessary for men and women to work the same hours. The firm is considering requesting permission to employ women for 5 days of 10 hours each, a maximum of 50 hours a week, or arrange a swing shift for the women and keep them on an 8 hour day. It is felt that a ten hour day is undesirable from the standpoint of health and efficiency for either men or women.

Lunch Period One hour.

Rest Periods

One during morning and another during afternoon — 10 minutes in rest room plus "traveling time".

Immediate Available Jobs for Women are:

Shipfitting: Laying out small templates
Replacement of bulkheads on platforms
Laying out on plate shop

Tin Shop:	Spot welding Storeroom Cutters Helping to lay out work on bench Pittsburgh machine Clerical work
Copper Shop:	Helper Sweeper
Welding:	Group A - a four (4) week course qualifying as Tack Welders Group B - an eight (8) week cource graduating as Probationary Improvers
Burners:	A four (4) week course, finishing as Helpers
Machine Shop:	Small turret lathes Bolt machine Small drill press
Electrical Shop:	Winding coils and armatures

NB listed these

JOBS ON WHICH WOMEN ARE EMPLOYED IN SHIPBUILDING (Construction yards and repair yards)

Tack Welders :
Electric welders: : Mainly subassembly welding and not welding on the ways
Acetylene welders:
Spot Welders :

Acetylene burners (flame cutting machines)
Welding checkers
Shipfitters' helpers
Sheet-metal workers' helpers

Electricians' helpers (wire electrical fixtures, repair electrical cords and miscellaneous equipment)
Machine tool operators: drill presses, lathes and bolt cutters
Painters
Optical workers
Foundry workers

Power sewing machine operators and hand sewers (making tarpaulins, clothing bags, slip covers for furniture, mattress covers, etc. in Navy yards)

Loftsmen helpers
Pattern makers' helpers

Tool room keepers
Stockroom and warehouse attendants and clerks
Material chasers

Crane operators
Electric truck drivers and motorcycle drivers
Laborers

Shop clerical workers

WPB listed these

ADDITIONAL JOBS SUGGESTED FOR WOMEN IN SHIPBUILDING

Plate shop: buffing and polishing

Paint shop: brush painting, spray painting, staining, puttying, removing paint, etc.

Rivet heaters
Rivet passers

Electrical shop: armature and coil winding; wiring; repairing and assembling switchboards, soldering, insulating field coils and transformers.

Machine shop: lathes, milling machines, grinding machines, drill presses, shapers, profilers, broaches, automatic screw machines, gear cutters, thread millers and nibblers.

Tool room: machine tool operations on reamers, cutters, and mills, fixtures, gages, etc;, operating drills, millers, grinders, shapers, lathes, planers and slotters.

Tool grinding

Bench work of filing, burring, lapping, etc.

Sheet metal shop: spot welding, soldering, riveting, drilling, operating shears, brakes and punch presses; and light assembly operations on metal lockers, boxes, shelves, etc.

Pipe and copper shop: Helpers to coppersmiths and pipefitters on light work
Power hack saw operator
Pipe bending and threading
Drill press operator
Solderer

Boiler shop: Operating drill presses, shears, and punch presses, and doing light riveting.

Boat and joiner shop: Woodworking machines (planers, routers, shapers, lathes;
Band saws and drum sanders)
Nailing and gluing wooden parts
Caulking small boats

Draftsmen and Tracers

 From the British report

Part II. War-Time Employment of Women in Shipbuilding and Allied Industries in Great Britain

The extensive and expanding demands of most munitions industries, including such heavy industries as Iron and Steel and Chemicals, have to a large extent been met by the introduction of women, who, as evidence shows, can do almost every job a man can do except those requiring sheer physical strength. Women are employed in the Iron and Steel Industry to the extent of about 13½ per cent. By contrast, little use has so far been made of female labour in the Shipbuilding industry, although many of the unskilled and semi-skilled operations offer considerable scope for their employment and those employers who have experience of women in their yards report favourably on them.

Present labour demands in the shipbuilding and allied industries run into several thousands and they must increase with the expanding shipbuilding programme. The need is urgent and imperative and brooks no delay. Men are not available from outside the industry; indeed the needs of the Armed Forces may further reduce the number of men already in the industry.

Existing male labour must therefore be used to the best effect, women replacing men on the lighter jobs, thus releasing them for heavier work on other jobs in which their experience can be used to best advantage. In some yards a start has already been made, and examples are quoted at the end of this leaflet of the occupations in which women have successfully replaced men. Employers are urged in their own interest to continue their endeavours to substitute women for men and to experiment in the employment of women in new types of jobs for which men have been considered essential in the past. District Shipyard Controllers and Shipyard Labour Supply Officers have been asked to give all possible help and employers should not hesitate to seek their advice and assistance.

RELATIONS WITH UNIONS

The introduction of women workers is, of course, primarily a matter of management policy. The employment of women on men's work is, however, an important departure from ordinary custom, and full and free consultation with Trade Union officials is indispensable. There is a national agreement between the Shipbuilding Employers' Federation and the Confederation of Shipbuilding and Engineering Unions (which is reproduced in the Appendix), but the fullest co-operation of local officials should be sought. In this connection Yard Committees should be able to assist, whilst the services of the Shipyard Labour Supply Officer should not be overlooked.

JOBS UNSUITABLE FOR WOMEN

Apart from heavy manual work which is obviously unsuitable for women there are Factory Act restrictions on the employment of women in certain process, e.g. red leading, lead processes in plumbing. The Factory Inspector should be consulted where there is any doubt on this score.

JOBS NEEDING MODIFICATION

Changes may be necessary in the case of heavy jobs where the physical effort required may be reduced by providing lighter equipment or lifting tackle, etc. In some cases two women may be substituted for one man, or more usually three women for two men. Certain jobs can be broken down so that the heavy skilled work is done by men and the finishing by women. In other cases men need give only temporary assistance or exercise general supervision. Subject to proper safeguards women have tackled really heavy work, especially in loading vehicles, trucks and machines.

WELFARE FACILITIES

The main essentials in the way of special accommodation for women are separate sanitary conveniences and washing facilities and separate facilities for hanging and drying clothes. Some firms have provided separate wash rooms, changing rooms, rest rooms or canteens; others have set apart a separate part of the canteen for women. The Ministry's Factory and Welfare Department usually requires good welfare amenities if shift work is to be permitted, but if these are available will be found ready to give permission for shift work and overtime. It is often worth while to allow women to clock out a few minutes before the men and to pay out wages separately. The need for giving willing and sympathetic help during the first few weeks will be appreciated when it is borne in mind that women who leave usually do so during the first month of employment; their treatment during this period will determine whether their introduction is successful or not. Such arrangements will be much facilitated by the appointment of a Welfare Supervisor.

Experience during this war has shown the importance of taking special steps to ensure that the women's living conditions outside the factory are also satisfactory. Such points as comfort in billets, recreation, facilities for washing clothes, shopping, etc., are fundamental in keeping women employees happy.

ATTITUDE OF FOREMEN

No difficulties have been reported on this account, and it is expected that any initial doubts will disappear when it is seen how women are able to free men for the heavy work. On one boatyard a woman is acting as forewoman with great success. In smaller yards, expecially boatyards, the forewoman can frequently be made the channel for any approach to the Management where there is no Welfare Supervisor.

HOURS OF WORK AND OVERTIME

The hours of women are governed by the Factories Act, 1937, and are normally limited to 48 per week with a limited amount of overtime. Night work is prohibited. Certain relaxations of these restrictions are permitted under the Act and by the Defence (General) Regulations, and firms wishing to employ women on overtime or in shifts should consult H.M. Inspector of Factories for the District as to what is permissible and obtain the necessary permission to do so before employing women in excess of 48 hours per week or at night.

OCCUPATIONS IN WHICH WOMEN ARE ALREADY EMPLOYED IN THE SHIPBUILDING AND ALLIED INDUSTRIES

A. Shipbuilding and Ship-repairing Section

Boiler Shop
- Electric Welders
- Crane Drivers
- Machinists
- Shop Labourers
- Universal Oxygen Cutting Machinists

Coppersmiths' Shop
- Coppersmiths (Light)
- Coppersmiths' Assistants (General)
- Tube Expanders and Facers
- Shop Labourers

Electrical Shops
- See Marine Engineering Section

Fitting Shop
- Bench Fitters
- Bench Fitters' Mates
- Shop Labourers

Foundry
- See Marine Engineering Section

Joiners' Shops
- Boxers
- Detail Bench Hands
- French Polishers
- Jointers
- Routers
- Woodcutting Machinists
- Woodworking Machinists
- Varnishers
- Shop Labourers

Machine Shops
- See Marine Engineering Section

Painting Shops
- Oxide Painters
- Shop Labourers

Pattern Shop
- Machinists
- Pattern Makers' Assistants
- Shop Labourers

Platers' Shed
- Burners' Helpers
- Crane Drivers
- Markers

Platers' Shed--contd.
Platers' Helpers
Radial Drill Operators
Shearing Machine Operators
Shed Labourers

Plumbers' Shop
Plumbers (Light)
Plumbers' Assistants (General)
Shop Labourers

Sheet Iron and Sheet Metal Shops
Sheet Metal Workers
Sheet Metal Workers' Assistants
Machinists
Shop Labourers

Smitheries
Drillers
Hammer Women
Universal Oxygen Cutting Machinists
General Labourers

B. Marine Engineering Section

Boiler Shop
Electric Welders
Electric Welders' Assistants
Gas Cutter Operators
Grinders
Light Platers and Helpers
Oxy-Acetylene Welders
Machinists
Markers Off
Pneumatic Hole Borers
Shop Labourers

Electrical Shops
Armature Winders
Assembly Fitters
Assistants (Electrical)
Assistants (Stores)
Crane Drivers
Machinists
Mica Moulders
Motor Attendants
Shop Labourers
Spray Painters

Foundry
Core Dressers

Welders' Shops
Electric Welders
Electric Welders' Trainees
Shop Labourers

Yards
Crane Drivers
Scrap Sorters
Truck Drivers
Yard Labourers

Abroad Ship
Cleaners
Electricians' Mates
Heater Women
Holders Up
Painters
Red Leaders
Riveters (Light)
Welders
Welders' Assistants
General Labourers

Foundry--contd.
Core Makers
Core Sand Mill Workers
Core Oven Workers
Core Drier
Electricians
Electricians' Assistants
Fettlers
General Labourers
Moulders (Various)
Machine Moulders
Mould Driers
Sand Sifters
Truck Drivers

Fitting and Erecting Shops
Assembly Fitters (Bench)
Assembly Fitters (Detail)
Assembly Fitters (Turbine)
Assembly Fitters (Valve)
Brass Finishers
Fitters (Erectors)
Fitters (Toolroom)

Machine Shops
Automatic Operators

Machine Shops--contd.
- Borers
- Capstan Operators
- Centre Lathe Turners
- Drillers
- Grinders
- Milling Machine Operators
- Planing Machine Operators
- Power Saw Operators
- Radial Drillers
- Shaping Machine Operators
- Turret Lathe Operators
- Shop Labourers

Pattern Shop
- Machinists

Pattern Shop--contd.
- Patternmakers' Assistants
- Shop Labourers

Spring Making
- Hot Formers
- Hammer Drivers
- Furnace Feeding
- Coilers
- Coiling Machine Operators
- Hardeners
- Grinders
- Drillers
- Reamerers
- Labellers

C. Boatbuilding Section

Construction (Heavy)
- Caulkers (Wood)
- General Labourers
- Joiners
- Joiners' Assistants
- Painters
- Shipwrights
- Shipwrights' Assistants

Construction (Light)
- Boatbuilders
- Boatbuilders' Assistants
- Caulkers (Wood)
- Electrical Machinists (Sanding)
- General Labourers
- Joiners
- Joiners' Assistants
- Painters

Construction (Fitting Out)
- Coppersmiths
- Coppersmiths' Mates
- Electricians
- Electricians' Mates
- Engine Fitters

Construction (Fitting Out)--contd.
- Engine Fitters' Mates
- General Labourers
- Plumbers
- Plumbers' Mates

Machine and other Shops
- Assembly Fitters
- Capstan Operators
- Centre Lathe Turners
- Coppersmiths
- Coppersmiths' Assistants
- Drilling Machine Operators
- Electrical Fitters
- Electrical Fitters' Mates
- Engine Fitters
- Engine Fitters' Mates
- Milling Machine Operators
- Plumbers
- Plumbers' Assistants
- Sheet Metal Workers
- Sheet Metal Workers' Assistants
- Shop Labourers
- Welders (Electric)
- Welders (Oxy-Acetylene)
- Wood Working Machininists

In addition to the above productive work women are extensively employed on the administrative side, and in the Drawing Office.

Ministry of Labour and National Service,
St. James's Square,
London, S.W.1.

August, 1942.

* * * *

APPENDIX

AGREEMENT

between

THE SHIPBUILDING EMPLOYERS' FEDERATION

and

THE CONFEDERATION OF SHIPBUILDING AND ENGINEERING UNIONS

EMPLOYMENT OF WOMEN IN SHIPBUILDING AND SHIP-REPAIRING ESTABLISHMENTS TO MEET WAR-TIME REQUIREMENTS

It is agreed between the Shipbuilding Employers' Federation and the Confederation of Shipbuilding and Engineering Unions, in relation to the ever-increasing pressure on the productive capacity of the Industry, coupled with the gradual diminution of the Country's available manpower, that where suitable male labour is not longer available women shall be employed in shipbuilding and ship-repairing establishments for the period of the war on work normally done by male labour.

1. Women employees under 21 years of age shall be paid on an age basis the corresponding rates and wages paid to boys and youths, irrespective of the work on which they are employed. These rates are as follows:—

Age	Basic Rate	*Bonus	Total Rate including bonus
16	14/3	4/9	19/-
17	16/-	7/1½	23/1½
18	23/-	9/6	32/6
19	28/-	11/11	39/11
20	32/9	14/3	47/-

2. Women employees 21 years of age and over entering employment for the first time shall during the first eight months of their employment be paid the rate corresponding to age 20 in Clause 1 of this Agreement, irrespective of the work on which they are employed.

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* Under the National Arbitration Tribunal Award of the 10th December, 1941, the rate of bonus of workers in the Shipbuilding and Ship-repairing Industry has been increased.

3. Women employees starting before age 21 will on reaching age 21 continue to be paid the rate corresponding to age 20 in Clause 1 of this Agreement unless and until they have completed a minimum of eight months' service in the Industry.

4. Women Employees 21 years of age and over who have completed eight months' service in the Industry shall be paid as follows:—

(a) In unskilled and semi-skilled classes:

(i) The full time rate and bonus of the displaced male employee where the woman is able to perform the whole of the duties of the displaced male employee without extra assistance or supervision.

(ii) A rate of 53/6 per week, composed of 32/9 basic rate and 20/9 bonus, where for any reason related to the nature of the work or to the individual woman's capacity or experience, she is unable to perform the whole of the duties of the displaced male employee without extra assistance or supervision.

(b) In skilled classes:

(i) The full time rate and bonus of the displaced male employee where the woman is able to perform the whole of the duties of the displaced male skilled employee without extra assistance or supervision.

(ii) A rate of 62/9 per week, composed of 40/- basic rate and 22/9 bonus, where for any reason, whether related to the nature of the work or to the individual woman's capacity or experience, she is unable to perform the whole of the duties of the displace male skilled employee without extra assistance or supervision.

5. The wages of women employees in shipbuilding and ship-repairing shall fluctuate at the same time as national fluctuations take place in the wages of adult male employees on the following basis:—

(a) Women under 21 years of age the same fluctuations, according to age, as apply to the wages of boys and youths.

(b) Women 21 years of age and over in the same proportion as the total wages including bonus of each woman employee under this Agreement bear to the total wages including bonus of male employees of the same class.

6. The employment of women in skilled classes shall otherwise be subject to the conditions of the various agreements between the Federation and the individual Trade Unions in regard to relaxation of existing customs and practices.

7. A list of all women introduced in shipbuilding and ship-repairing to meet war-time requirements shall be kept by each firm and supplied from time to time through the Local Association of Employers to the District Secretary of the Confederation of Shipbuilding and Engineering Unions.

8. The provisions of the Agreement do not affect the employment of women in occupations in which women were employed in the Industry before the war.

Signed on behalf of:

THE SHIPBUILDING EMPLOYERS' FEDERATION:

J. M. Ormston.
Wm. Watson.

Signed on behalf of:

THE CONFEDERATION OF SHIPBUILDING AND ENGINEERING UNIONS:

J. Stephenson.
E. Gilbert.

17th July, 1941.

Complete copy of Comments

Subjects Covered in Working Conditions' Data in Shipyards

I. **List of Shipyards**

II. **Length of Lunch Period** 35 yards

III. **Food Facilities** ✓ 35 yards

IV. **Length of Rest Period** ✓ 26 yards

V. **Rest Rooms and Toilets** 35 yards

VI. **Physical Examinations and Medical Facilities** 33 yards

VII. **Safety Clothing**
   1. **Goggles** 41 yards
   2. **Clothing** 41 yards

VIII. **Plant Housekeeping** 33 yards

~~**Coverage:- 26 yards on the Eastern Coast.**~~

Incomplete on most items
(41 yards were surveyed)

"Work Clothing" is entered for all 41 yards

II Length of Lunch Period in Shipyards

	Number of Yards	Number of the Yard
Total yards	26	
15 minutes	2	(15) and 26
20 minutes	1	14
25 minutes	1	11
30 minutes	1/ 13	1,2,4,5,13, (15),18,19,20, 21,24,(22), (23)
40 minutes	1	10
45 minutes	2/ 2	8 and 12
1 hour	3/ 1	17
No women employed	5	3,6,7,9,25

1/ 2 of these yards have a 30 minute period on first shift only; 1 has 15 minute periods on 2nd and 3d shifts; and 1 has 20 minute period on 2nd shift. (Plants #22 and #23).

2/ 1 plant has a 45 minute lunch period for women and a 30 minute period for men.

3/ 1 hour for 1st shift only, 20 minutes for 2nd and 3rd.

III Food Service in Shipyards

Plant Number

1. There is a cafeteria in the manufacturing and shop area of the yard. It is said to be very crowded. It is also open for serving those on second shift. (No women on 3rd shift). To make some warm food available to those in the administrative offices and other parts of the yard several large trucks have been fitted out and go to the more remote parts of the yard at meal times. These trucks are fitted out as small cafeterias through which the workers file. Some warm food is served. However the workers must eat outside of the trucks, and would eat in various places, probably outside in nice weather. (Note-these are not hand or electric vehicles but actual trucks.) However, from observation of workers on the bus and from plant tour it was obvious that many seemed to be eating outside. Appeared to be a matter of individual preference. 30 minutes for lunch.

workers bring their lunches. Some eat in their workrooms, others outside

2. Box lunches, milk, candy soft drinks, sold in the yard. No lunch room where hot food is served. A room with tables, benches and a hot plate is provided for the women where they can cook coffee, heat soup, etc.,--lunch room located above locker room. 30 minutes for lunch.

3. No report. (No women)

4. Company has no food service within the yard; there is a restaurant just outside the yard and various sandwich stands across the street; and sandwich and cold drink vendors at the gate. Most people bring their lunch and eat at or near their work bench. There is no place provided. Do not have hot drinks unless they bring some in a thermos bottle, or go across the street which would be quite impractical due to the crowding and the limited time. Company tried having lunch stands in yard, but had to give this up, due to the fact that many quit before lunch time and went to the lunch stand - or stayed on at the crowded lunch stand after the whisle blew, waiting to be served. All of this rush and crowding was causing trouble, "even fisticuffs" so company closed out this arrangement. 30 minutes for lunch

5. Have a large cafeteria in yards, also food wagons which go out into the ways, and skids with hot foods. Large wagons which are towed by trucks and have lunch counter set up. Workers pass thru wagons. 30 minutes for lunch.

6. No food service in yard. Most bring their lunches. Can get food at a number of restaurants adjoining the yard or can go to the town restaurants about two blocks away. no women

7. There is no food sold in the shipyard. Bring lunches or go over town.—(3 blocks) Company felt that it was bad for the men to do the hard work and drink cold drinks, so no food is sold in the yard. no women

If bring lunch can eat at own work place or a more comfortable place if available.

8. Company has a cafeteria but is not large enough to serve all workers without lunch period allowed. Also there are two open-air canteens where some hot food is available and also there are some tables and benches covered by roofs but otherwise open to the weather. There are also a few small "stalls" at which some cold food can be purchased and taken someplace else to be eaten. The cafeteria is open for breakfast, a noon meal and evening meal-until about 6:30 PM but is not open for the night shift. One canteen has been open for the lunch period. It is impossible for all workers to get service. There has been a great deal of complaint about the food situation and several persons

Continued

Plant Number

8 interviewed agreed that something must be done about it. The problem has been increased by the fact that some restaurants in town which used to put up sandwiches cannot do this anymore. (Also a sign was noticed in company cafeteria that thermos bottles will no longer be filled with coffee.) People living in "war apartments" also are having trouble over food. However yard officials interviewd believe they have definite reasons to hope that the food situation will improve. The cafeteria is to be enlarged and a second line installed. "mobile restaurants" are also a possibility-perhaps. Persons interviewed want to give the new management a chance to improve the situation before making more complaints. (Apparently all visitors suggest staggering the lunch periods-keeping the cafeteria and canteens open for longer periods. Personnel director claimed this is not practical because each department depends upon the preceding one for continuous flow of material. Agent still thinks food facilities could probably be utilized over longer periods of time during working hours.) 45 minutes for lunch.

9. No food service in the yard but yard is just 1 block from the center of the business street. There are 2 restaurants close by. Some go to the restaurants, most bring their lunch. No women

10. Large cafeteria open to all. Expensive and indifferent food. In each shop a cart or booth sells sandwiches, coffee coca cola. The shop superintendent said that no employee needs to walk more than 800 feet for food. In most cases, that would mean sandwiches and coffee or such hot food as could be carried into booths in the shops. The main cafeteria can seat only about 500. This is run by an outside concession as are the booths in the shops. Prices are high and the food admittedly not the best. Office lunch hour follows that, for the shops to spread the crowd. Girls may eat in the rest rooms, where tables are provided. Some have 40 minutes for lunch, others 10 or 15 minutes.

11. Cafeteria and food carts which make food available in all departments. At electrical shop, cart sells sandwiches stew, milk, coffee, fruit, cake. Eating is mostly at the work places. Workers bring lunches or buy bag lunch - 2 sandwiches, fruit + cake for 30 or 35¢ - from cart wheeled into each dept. 25 minutes for lunch.

12. "Cafeteria and food sold in yard but girls told to bring their lunch so they will not have to get in the mob." Women eat in juice room adjoining rest room where the Matron serves them free coffee. Men buy at cafeteria or carts and eat anywhere. They have 30 min. lunch period while women have 45 min.

13. None at all in plant or nearby. All bring their own lunches. 30 minutes for lunch.

14. ~~No report.~~ Concession provides canteen service - sandwiches, coffee, soft drinks, etc. No time in 20-min. lunch period to leave yard & no eating places near enyway.

15. Nothing but sandwiches sold at certain points in the yard; said to be very poor. Most carry their own lunch. Office force goes out to distant restaurants since they have 1 hour lunch period. 30 minutes for lunch.

16. There are three cafeterias in the yard however these are patronized only by the office or some of the shop bosses as all agreed that with 15 minutes for lunch it would be impossible to get to them and grab a bite even and get back to work. These cafeterias serve a meat 2 vegetables and coffee for 25 cents, with a small piece of pie or fruit at 5 cents more. Cafeterias are only open to the first shift; open for breakfast and lunch. Yard could get breakfast here. Canteens where soft drinks (no coffee) sandwiches, cakes, candy, etc. are sold, are scattered thru the yards; these are open to first and second shift. (Some on in department takes orders and brings food from canteen to many for their lunch.) In addition, many and probably all shops have coca cola and candy dispensers at the door. The third shift has no food service

continued

Plant Number

16. except the coca cola and candy dispensers which may often be empty by the time the third shift arrives. Workers eat at their benches, are not allowed to take food into the wash room or rest room, except for the workers in new construction department who are allowed to go to their rest room and eat. 15 minutes for lunch.

17. Thereare canteens over the yard selling cookies, sandwiches cakes, soft drinks, etc., but no coffee. These are open to the first shif tonly. For the Negro men, on the first shift only, there is a long shed (open on all sides) with tables where Negro women who come in at noontime serve various kinds of hot food, pies, etc. Agent saw this being served in little tin pans; food looked plentiful and very good.(Fried chicken, beans and sweet potato pie) In good weather the men eat out in the yard sitting on the ground, or perhaps on some material. In bad weather they eat inside of their own shop, sitting on the ~~floor~~ floor or on material. Many bring their own lunch and eat at their work or in the yard or may eat in the rest room adjoining the washroom. Some go out at noon to one of the several nearby restaurants. There is no food provided for the second and third shifts. Most bring own lunch with a hot or cold drink in a thermos bottle.
First shift has 1 hour for lunch, 2nd + 3rd shifts have 20 minutes.

18. Virtually no food service at time of visit. One small eating place (reported to be dirty) Day after last visit to yard, Canteen Service, Inc. (Chicago firm said to be ~~opening~~ operating in a number of shipyards) was sending staff to shipyard to begin work on the problem. A cafeteria building had already been constructed - a good deal of equipment (but probably not all) had arrived. According to plans, office personnel to eat in central cafeteria. Food to be carried in trucks to about 7 canteens to be constructed in different parts of the yard. 3 of these to be buildings with tables and benches as well as canteen service. Others to be stations for food - workers eating around the yard at various place. (Lack of suitable food has been one source of great complaint - If this plan can be carried out speedily, should be a great help to yard morale.) 30 minutes for lunch.

19. Two cafeterias are open 11 a.m. to 2.p.m. and for lunch periods for night workers. Canteens are under construction at various places. Planning to sell coffee, milk cigarettes, candy, etc., - waiting for coffee urns. It was said that the number of customers varies greatly each day - no way to estimate the crowd. 30 minutes for lunch.
one difficulty in operating the cafeteria in the

20. Cafeteria for office and have one in the yard. Now only hand-out food at "Head Houses on the Slips." The concession gives excellent food at fair prices. 70 percent of employees buy food, though many supplement lunch they carry. Ten canteens in yard. 30 minutes for lunch.

21. A cafeteria is now being equipped. Concession provides food at stands in yard. Company runs its own restuarant for the office and administrative force. The Navy canteen is open to office force part of the day,but not to production workers. 30 minutes for lunch.

22. Cafeteria for the yard open for first shift only. Small canteens about the yard open at all lunch hours - serve sandwiches cake, pie, milk, cold drinks, etc. no coffee or hot food. Workers buy food at canteen and eat at own work bench or in the yard. Most all bring own lunches and eat at work bench.
First shift has 30 minutes for lunch. 2nd + 3rd shifts have 15 minutes.

23. Have a cafeteria where hot food coffee etc. are served to all three shifts. In addition, have lunc counters for all shifts where sandwiches coffee, cake, pie, etc. are sold and eaten at work nearby. First shift has 30 minutes for lunch.
2nd " " 20 " " "
no women on 3rd shift.

continued

also canteens about the yard where sandwiches, pies, cakes, coffee etc are sold and eaten in employees' own work rooms or about the yard.

Plant Number

24. Have a food concession - a caterer brings in hot food to all three shifts. The food is sold at a long counter and eaten in employees' own workshop or about the yard. These are open on all shifts. 30 minutes for lunch.

25. None - all bring own lunches. No restaurants and no food sold nearby. Company says they have refrigeration and that employees can keep their lunch in the refrigerator - no provision for heating lunch. Company is considering a cafeteria. no women

26. Have food booths scattered throughout the various yards at points convenient for both inside and outside workers. Sandwiches, coffee and soft drinks are served. ("Have a canteen for meals.") A complete hot meal can be obtained at a reasonable cost (50¢) in the canteen. The canteen used to furnish meals all day. The night shift usually wanted to eat when they came off at 7:15, which was allowed; but when the day shift coming on to work, at 7:15, formed a habit of getting breakfast at the yard after they checked in and before starting to work, they had to close the canteen at that hour.

15 minutes for lunch.

Occupation groups of employed women: 1940, 1945, 1950, and 1952 1/
(Thousands of women, 14 years of age and over)

Major occupation groups	1952			1950			1945			1940		
	Number of women	Percent distribution	Percent women formed of all employed persons	Number of women	Percent distribution	Percent women formed of all persons employed	Number of women	Percent distribution	Percent women formed of all employed persons	Number of women	Percent distribution	Percent women formed of all employed persons
Number of employed women	18,234	100	30	17,176	100	29	19,310	100	36	11,920	100	26
Clerical and kindred workers	5,284	29	65	4,539	26	59	4,900	25	70	2,530	21	53
Operatives and kindred workers	3,496	19	29	3,215	19	27	4,610	24	38	2,190	18	26
Service workers, except private household	2,134	12	46	2,168	13	45	1,980	10	48	1,350	11	40
Professional, technical, and kindred workers	2,026	11	39	1,862	11	42	1,510	8	46	1,570	13	45
Private household workers	1,748	10	98	1,771	10	92	1,670	9	94	2,100	18	94
Sales workers	1,416	8	38	1,516	9	39	1,440	7	54	830	7	28
Managers, officials, and proprietors, except farm	978	5	16	941	5	15	800	4	17	450	4	12
Farmers and farm workers	780	4	13	916	5	13	1,930	10	22	690	6	8
Craftsmen, foremen, and kindred workers	244	1	3	181	1	2	300	2	4	110	1	2
Laborers, except farm and mine	128	1	4,	68	2/	2	170	1	6	100	1	3

1/ Statistics are for April of each year except 1940, where they refer to the last week in March.
2/ Percent not shown where less than 1

SOURCE: U. S. Department of Commerce, Bureau of the Census, Current Population Reports, and
U.S. Department of Labor, Bureau of Labor Statistics, Monthly Labor Review, August 1947.

Shipyards

III. Food Service.

27. Canteens (8 or 9) in yard. Served cold drinks, milk, candy bars, coffe and doughnuts, and sometimes cold sandwiches when anything to make sandwiches with was available. On some days it was said that some of the workers are able to get sandwiches but frequently those at the end of line cannot get sandwiches because supply is so limited. Chief complaint has been that meat supply has not been available. Originally it had been planned to have hot stew or hot soup at canteens but impossible to do this.

Small canteens outside main gate of yard. Sandwiches, coffee, doughnuts, and milk available. Sandwiches not always available.

Company is constructing a cafeteria building. It is hoped that food can be obtained when cafeteria is ready to operate. Agencies busy on food problem. 30-minute lunch period, yard employees; 1 hr., office employees.

28. A cafeteria in each yard said not to be too good. Cafeteria near barracks outside East gate very dirty though new. Full meals available. As lunch periods are the same for all workers cafeterias feed and seat only a fraction of the employees.

No enthusiam about cafeteria in West yard. Thick mud on the floor at time of agent's visit. Every table had piles of dirty dishes. The air was thick with smoke.

In East yard a small room near mold loft where lunch may be eaten, the only place of its kind in yard. In paint dep't. both men and women eat lunch sitting on cans of paint (without washing hands), but the fitters and tackers must go to the cafeteria which seats possibly 150 or eat in the toilet rest room (which is warm).
(30-minutes, yard employees)

29. Lunch counter. The food service is poor for women. A so-called canteen serves a noon meal, hot plate, pass along and take it outside to eat it at Bath Yard. Could not possibly serve any great number of workers. At Hardings a small canteen served over a counter sandwiches all wrapped, milk, coke, occasionally coffee, bakery cake, and sometimes turnovers. At the yard a few such food places scattered about.

Almost all the workers bring lunch boxes.

The office staff (personnel) seems to have no place to eat. (First time the agent has found this condition for managerial end of the outfit) The personnel officer fully realizes the inadequacy of the food situation.

Plant Number

Food Service in Shipyards (Cont.)

30. No women on production. No facilities.

31. Cafeterias: The possibilities of a good meal during lunch period naturally more restricted on a 20-min. than on a 40-min. period. Three cafeterias in yard used by those who have 40-min. lunch period. The cafeterias serve excellent food, well cooked and very inexpensive. A complete meal can be bought for 35 cents.

The cafeterias are open in the morning from 6;00 to 8;30; during the noon period from 11;30 A.M. to 1;30 P.M.; and in the afternoon from 3;00 until 5;30. These hours allow workers coming off the 12;00-to-8;00 shift to get a hot meal before leaving the island, and those coming on at 4;00 or 4;30 can eat before starting work. But the cafeterias do not give service during the lunch periods on the two night shifts.

From information handbook: Cafeterias are augmented by 5 booths where bag lunches, wrapped sandwiches and pastries, coffee, ice cream, soft drinks, candies and tobacco are obtainable. These samll booths have limited seating capacities for those who bring own lunches.

In addition to cafeterias there are 7 canteens, which sell hot meals, soup, vegetables, sandwiches, milk, coffee, ice cream, etc. These places are used by workers on the shorter lunch period. Occasionally they have benches where lunches may be eaten.

There are 6 chow wagons which serve hot meals in some of larger shops during day and swing shifts. Similar wagons are stationed along the docks where needed. It is expected that this type of service will be expanded.

Canteens and chow wagons are available during the night, but not the cafeterias. The quality of food and efficiency of service at canteens are not equal to standards set up by cafeterias. If it is feasible, the authorities believe that it would be desirable to have fuller cafeteria service to cover all lunch periods. For other details, see schedule.

32. Large, clean cafeteria for entire force (and canteens). Personnel Director thought this no longer open nights. Cafeteria manager said it was open until midnight. Hot food. No real food shortage except few items. (Personnel Director thinks some trouble getting food but due to bad cafeteria management.)

33. Plant supervisors and office workers eat in cafeteria in office building.

In the yards there are 16 small booths or substations where soft drinks, milk, hot coffee, candy, fruit, and a choice of hot lunches, consisting of meat and vegetables are sold. Workers from plant usually bring their own lunches or part of same. The substations are open to all shifts. They are run by concessionaires. Great shortage of milk at present. The Director of training thinks the food problem in Savannah is serious partly because army has bought up huge supplies of food and rationed civilian population and because soldiers are eating in restaurants and using up civilians' food.

Yard number

34. Cafeteria for hot lunch open noon and night lunch periods. Canteens. Most of workers go home for lunch (prefer this in south and this yard is near center of Charleston). Some bring lunch.

35. Achnowledged inadequate. Working on it. Two cafeterias handle small number now. Counter service in various locations of food served in paper. Benches along the road for use at lunch time.

Incomplete (41 yards were surveyed)

IV Summary of Rest Periods in Shipyards

	Number of yards	
Total yards reporting		20
No formal rest periods	1/	15
Formal rest periods of		5
2 - 5 minute periods		2
2 - 10 minute periods		2
2- 15 minute periods		1

Incomplete

#20 + 21
#12 + 13
#5

5 yards have no women on production and 1 yard does not report on rest periods.

1/ One yard has formal rest periods, (length not reported) for certain jobs, crane operators, key punchers, and those on repetitve jobs.

While formal rest periods were reported in only one-fourth of the yards, in only one of the other yards did it seem there was a restriction on informal rest periods. In some of the yards women are allowed to smoke on the job.

Length of Rest Period in Shipyards

Women's Bureau Standard - 10 Minutes of Rest per 4 Hour Spell

Plant Number	Plant Practice
1	No formal rest period
2.	No formal rest period, but both males and females are allowed to take a reasonable amount of time off.
3.	No women.
4.	No formal rest periods.
5.	2-5 minute periods (each shift) both male and female.
6.	No women.
7.	No women.
8.	No formal rest periods.
91	No women.
10.	No formal rest period, but can smoke at work except in Ropewalk, but cannot eat during work time.
11.	No formal rest period. In electrical shop no objections to rests for women who stand, but no smoking in rest rooms. Elsewhere smoke in rest rooms.
12.	Two 10 minute.
13.	Two 10 minute.
14.	No formal period. Each foreman decides how much time women may have to go to rest rooms or have a smoke.
15.	No formal period.
16.	No formal period. Women are absolutely not allowed to sit down in wash rooms or rest rooms during work hours, according to the matron. One duty of matron is to take the badge number of any woman found sitting down in rest rooms or wash rooms. Women have been inclined to waste time so, Company has "had to get more and more strict." The question of rest periods was talked of at length by agent "without too much response from the Commander" though he seemed interested in trying rest periods, but he never said that he would.
17.	No formal period except crane operators, key punchers, and those on repetitive jobs. No report on length of rest periods. On some jobs, smoking is allowed and if not allowed on the job, can go into rest rooms and rest and smoke, lie down or sit down a few minutes and relax. Supervisors are in and out of rest rooms but never speak to an employee unless "continually resting" in the rest room.

Plant Practice - continued

Plant Number	
18.	No report.
19.	No formal period.
20.	Two 5 minutes for women; none for men.
21.	Two 5 minutes for women only. (In addition to time required for personal needs.)
22.	No formal period, but girls may leave work when they wish and no questions asked.
23.	No formal period, can smoke on most jobs except mold loft; can go to rest room and sit down and relax and smoke.
24.	No formal period, can go to rest room as they choose and can smoke on job, except in mold loft. Smoke in rest rooms.
25.	No women.
26.	No formal period, but never object if males and females stop and rest a few minutes between jobs, and they do.

Incomplete

V Rest Rooms and Toilets for Women in Shipyards

Plant Number

1. The rest room facilities for women are not really adequate yet, according to one of the officers. This is an old yard, with old buildings, and it takes time to add new facilities - too much of the floor space cannot be removed from production. However, the situation is being improved gradually. The South Yard is new and is said to have much more adequate rest room facilities - for Negro as well as White women. (From that it is supposed that the Yards will begin to employ Negro women soon.)

2. There were both wooden lockers and open coat racks. Rest rooms had wash basins, toilets and benches where the women could sit down and rest. Rooms were heated, so the women working out in the open could occasionally come in and warm themselves.

3. No report.

4. There are no rest room. Company says "it takes forever to get toilets installed for women." Have considered a lounge type room in the departments where the most women work, but have neither the space nor the materials for this. Agent suggested trailers or demountable houses but didn't get far with this. Company says that they never expected to employ women and will have to do these things slowly as they can. Agent offered to send some of the Bureau's bulletins on various phases of employment of women. Company would appreciate these.

5. Comfort stations for women located in the yards in at least 5 or 6 places. Stations were adequate in toilet facilities and had cots with clean blankets and pillows, and benches. Only sinks and cold water in the two which agent inspected.

6. No report. (No women on production.)

7. No report. (No women on production.)

8. As in other shipyards there was difficulty in this yard in getting the necessary rest room facilities for women,-and as yet the problem has not been completely solved. However, the supervisor of women has made this problem one of her chief items of concern and has been able to accomplish a good deal through persistence.

Facilities have been provided in various ways. When an office building was vacated by a construction contractor who had been working at the yard it was possible to get a couple of small rooms in that building for the use of women. In one room four toilets and a few lavatories were installed, also in the carpenter shop at the yard. These are large enough so that a woman may leave her purse, her lunch, a towel, and such welding equipment as a helmet and gloves in her locker. The lockers are not big enough for clothing. (However Mrs. Powell was glad tobe able to get even these facilities.) These facilities are used by the girls in the training school and in the mold loft which is nearby. Various parts of the training school are given a "recess" at different times in order to avoid overcrowding in the rest room.

In the fabricating shop a rest room for men was converted into a room for women. On the platens one rest room for men was also converted but this still made available only 3 toilets for a large number of women. Also, since the women working on the platens, are scattered over a wide area often a number of women arrive at the rest room at the same time and either must "wait their turn" or waste a lot of time going back and forth. Mrs. Powell said that she found however that a few office girls employed in the office of the platen's superintendent had a rest room of their own with two toilets which could be combined

Plant Number

continued

8 with the other facilities available by knocking out a wall. The office girls wanted to keep their private room but apparently were over-ruled. Some other additional toilets are also being installed so that eventually there will be 9 available for the women on the platens, but these were not all ready at the time of the visit. The rest room is quite small and contains only one or two benches where women may sit and rest for a minute or two. However there is a small shed containing some benches, a few tables and a heater at the head fof the platens which is used by the woman who is in charge of the women on the platens. Apparently some of the women are permitted to use this room when they are not busy or for a short rest now and then-but according to Mrs. Powell she is having difficulty with a few women who are found sitting in this shed when they should be working.

In the sheet metal shop the foreman has a private rest room for his own use. Since at present there are only a few women in this shop they are using the foreman's room.

Additional rest rooms for women are needed - and it was said that one of the principal reasons women are not being used in the machine shop is that rest room facilities are not available.

Recently one or two maids have been employed to take care of women's rest rooms, and Mrs. Powell and her assistants apparently keep a close check on the appearance of the rooms.

9. No report. (No women on production.)

10. Sanitary facilities are adequate except that girls must provide their own soap and towels which they must keep in their lockers. Soap and towels cannot be provided for women unless they are for men and there are said to be no funds for the purpose. In the electrical shop where most jobs are less dirty, paper towels and liquid soap in dispensers are provided. The Master said that funds were borrowed for the purpose from Public Works and when no longer availble there would be no more soap and towels. Breck's protective cream is provided for the girls and used with satisfaction.

Girls in the rest room said that they are permitted to take 10-minute rests in each half shift and may lie down then if they wish (one couch for 175 girls) but if a girl is not feeling well she must report to the Doctor at once.

11.

11. Rest rooms in the electrical shop are well equipped with soap and towels but there are no washable covers for the studio couches. No lockers are provided but coats are hung on long handled hangers on pillars in the work rooms. In the machine shop, the women's rest room had no soap or towels and no wash cover on the couch - and the work is very dirty. No report on toilets.

12. Unusually attractive women's quarters. Locker room with 53 lockers, lunch room, rest room, toilet room with 5 toilets and 5 basins, liquid soap, paper towels. Man does heavy cleaning daily. Immaculate. Matron is practical nurse. Gives minor first aid. Permits girl to lie down ½ hour then sent home if not ready for work.

13. Just outside the Navy Boat Shop was a small building recently put up which contained toilet, washbowl, coat rack for haning coats and just enough space to change their clothing (and in the other part of the building was the boiler.) It was adequate for six girls but not for many more. However outside the main shop there was also a small portable building containing the office toilet, washroom, and room where they could eat their lunch. Too, the girls working in the shop over there used the office rest room facilities.

continued

Plant Number

14. A good job seems to have been done on the toilet and rest room facilities for women. Good screening, soap, paper towels and sanitary napkin facilities were observed. Cots and chairs for the rest rooms had not yet arrived but were expected soon.

15. Only one room where production women can really rest and that has no couch. Additional rooms on the way but no place to liet down except 3 beds in the hospital used by both men and women all in one room. A screen is put up for a woman.

16. No report on number but agent learned that new toilets were being installed. The toilets in Pipe Covering Dept are inadequate - only 2 (34 girls in shop & 300 men). Co working on this & hopes to have a new washroom before long.

17. There are rest rooms of muc the same style in all shops where women are working. However, only went into two, and 1 that is being built for a shop where there are not any girls. Washrooms were very clean, well lighted and ventilated; toilets are enclosed, many wash basins and toilets. Hot and cold water, with soap and paper towels - mirrors and Kotex vending machines - metal lockers. These rest rooms were also clean, had nice leather chairs and lounges tables and benches where lunches may be eaten. Maids go from one to another of these to clean them and matrons are being put in where there are many girls.

18. One of the chief complaints is on lack of adequate sanitary facilities. These have been bad for women. Some of the women do not have flush toilets and must wash at an open pipe running out of the ground, if they wash at all-according to report of YWCA Industrial Secretary who visited some of the toilet rooms. However, some new toilet facilities for women are bing built as an addition to the fabricating shop and elsewhere. Also some toilets in the head houses have been converted for women but these are, no doubt, very small. It was noticed that some plumbing has been installed in the new cafeteria building and the blueprints call for toilet facilities there but the building was not being used at the time of this visit and had been standing idle for a long time. However, according to more than one report, toilet facilities for women are probably better than those for men, since the company has apparently never believed in providing any "fancy facilities."

19. This company has a locker room and some washing facilities in a special building. The company stated that this building has never been used to any extent, the workers are always in too great a hurry to get away at the end of the shift. (Agent tried to get to see this building, but was unsuccessfull. However, one person did who did visit it reported that there are lockers and wash basins on the women's side. According to some reports, there are some showers for men). Union officials interviewed later seemed to agree that the building is not used a great deal. One reason was thought to be that workers ride together in car pools, and one or two who might want to use locker room facilities cannot keep a car waiting. No specific data on toilet and washing facilities for women around the yard, but some facilities in various shops and elsewhere.

20. At each end of the quarter mile long steel mill in which most of the women work there is a combination toilet and wash room. There is no provision for rest. The rooms are crowded. If women eat in this room, they must sit on the floor. There has been trouble with the toilets overflowing. There is no provision for change of work clothing. The women's rooms for office workers vary in their adequacy. Some are excellent. Sanitary napkins have been missing from the most used rooms for some time as the machines are out of order and no one does anything about it. The Personnel Adviser for Women said she had tried to bring about improvements in the women's facilities. She was referred to the purchasing

continued

Plant Number

20. agent who informed her that they met the State requirements. She went no further. Her duties, so far as supervision of women is concerned, have not been well defined, but her activities seem to be limited to the adjustment of grievances of women.

21. Since the girls are working in varied locations there are a number of small toilet rooms adequately equipped each with some sort of a couch, and with a matron to keep it clean. In the Plate Shop where no women have worked until now toilet facilities for 250 girls are in process of installation. A structure resembling a stone fort has been built in the middle of one side of the shop. The second floor will be used for offices reached by a separate entrance, but the first floor will contain a room partitioned off for toilets and basins, a large locker room and a separate small rest room.

22. No report on adequacy of rest rooms and toilets. There are rest rooms, because we are told the girls may smoke and relax in rest rooms as they wish, unless they stay too long - then the guardettes end the rest period. Evidently are couches in rest room because "girls may lie down and guardettee will bring them hot water bottle to relieve cramps." (If really ill most go to first aid.)

23. Company has taken some of men's wash rooms and made them into wash rooms for women - ~~No report on adequacy of wash rooms, rest rooms, and toilets.~~ "No doubt this is adequate"

24. "No report on this but have no doubt that an adequate no. of toilets have been supplied"

25. No report.

26. The rest rooms and toilet facilities were adequate and clean as far as seen in the one yard visited. (This company has 3 yards - each one repeating the activities of the other.) Each yard had toilet facilities in every inside department and all outside work was within 300 ft. of toilet facilities. (State regulation)

V. Rest rooms and toilets for women in shipyards (Cont'd.)

27. There were a number of toilets in one wash room visited. Several other wash rooms for women in yards so that facilities appeared to be more adequate than in some other shipyards. There are not any toilets for women on the boats and this means that some women have to walk a distance of a couple blocks to a wash room,

28. In East yard, 50 girls use a room near mold loft which has 2 toilets and 2 basins. In fabrication shop there is a small room with 3 toilets used by girls. The main toilet room serves 650 girls. There are 16 toilets crowded in a small space.

In West yard, the only sanitary facilities for all tackers, welders, shipfitters, cleaners, on and off the boats are in one location. There are 10 toilets.

29. All rest rooms have a matron in attendance. The rest rooms are too small and crowded to have girls gather there for smoking and chatter.

At Hardings(Part of Bath Iron Works), the facilities were far better than at the Yard at Bath. The girls had metal lockers. Large restrooms with three circular wash basins, hot and cold water, soap and towels, eight toilets plus one in the first aid room, adjoining. There were benches where girls could sit down and there was a small room with a couch where girls could lie down. These rest room facilities, ample when plant was built are already crowded in day shift, and if more workers are added will be scarcely adequate.

Rest Rooms and Toilets

Plant number

30. No women on production.

31. The women's rest rooms run a considerable gamut as far as convenience, comfort, and efficiency are concerned. This range is almost ineviatable, in view of the variety of conditions under which women work. Some workers are in buildings that have enough space to accommodate rest rooms and lockers. Others are working out-of-doors on widely scattered jobs on the docks ways, and ships, where providing additional facilities often requires erecting a new building. This has hampered providing adequate rest rooms, but is a problem which is rapidly being met.

The rest room in the pattern shop has a couch, lounge chairs, tables, and private lockers. Other rest rooms, at the submarine base or the North Ways, for example, are adequately equipped with toilets and basins, but are more primitive in their furnishings.

A number of rest rooms do not have a sufficient number of chairs, and many do not have cots. There are some rest rooms in which the number of toilets or basins is insufficient for the number of women accommodated. All of these matters are known by the authorities and steps are being taken to remedy them.

A few rest rooms are equipped with showers. One such room has been built for women working out-of-doors. Women did not have time to use them because the bus which they had to take in order to get home left too soon after the end of their working day.

On the whole the rest rooms were found to be very clean but a few outlying ones were in need of more regular cleaning.

Most of the rest rooms have some heating provision but not all of them. Having heated rest rooms is particularly important when many of the women must work outside and need some place to go where they can get warm.

32. Personnel director says what toilets they have are O.K., but there are not enough. One at end of yard is difficult for those at other end to reach. Should have two. Have woman to ~~help~~ keep toilets ~~clean and~~ in order. Firm considers toilets a real problem. Plans to increase facilities.

33. Have opened new toilets and washrooms. For women, one toilet room near warehouses, one at outfitting dock, one in Supt. Bdlg. and one in First Aid. Two large rooms in yards and 2 small toilet rooms in Fab. Shop which are bad and are to be remodeled. One large toilet room in yard had 10 toilets, 2 fountains, mirrors and plenty of floor space. Was clean and convenient.

Rest Rooms and Toilets (Cont.)

35.(Cont.) In the locker room the two rows of basins down the middle have hot and cold water and soap but towels must come from employees' lockers. There are three showers in this room with well-arranged dressing booths outside but no outer curtains. The Master said that when girls lingered too long in the toilets the doors were removed. The girls protested demanding privacy. He went half way and put on 3 foot doors which permit semi-privacy. He told them that girls who would rush naked to get first to the shower need not be concerned with privacy - and no more has been said. The women's rooms seem to be well kept and the housekeeping everywhere was excellent.

Several shops have not been able to employ women because they lacked facilities and others have had to stop when they reached the limit of accommodations.

Work is going forward on installation in a separate central building in which there will be lockers, toilets, and basins for 6,000 girls for use before and after shift and at meal time. Shop facilities will care for needs during working hours.

The inside machine shop has been short of facilities and a large new installation is under way there. The electric shop had to stop employing women because of its lack and is about to move to new quarters with facilities. Other women's rooms were not visited after we were assured that all facilities included hot and cold water, soap and towels and in each there was at least one place to lie down. (In the shipfitting shop there were three couches to be used only in case of illness too great to permit a girl to go to the dispensary.

The pipe shop has employed women only two weeks. There are five toilets for the combined use of office and production workers (with colored girls in both groups). The Master assigned 2 toilets to the office and 3 to the shop girls so the office girls would not get their clothes dirty. The girls said this was discrimination so he is meeting with each group to explain his purpose.

Minimum Requirements for Safety and Industrial Health
in Contract Shipyards
U. S. Navy and Maritime Commission

VI. Physical examinations and medical facilities.

Physical examinations to ensure proper placement of employees shall be given. Periodic check examinations shall be given men working in occupations potentially hazardous to themselves or others, and, in jobs in which there may be health hazards. Separate waiting treatment and examining rooms for women should be established. In yards where number of employees is large, it may be logical to establish a separate dispensary for women patients. (pp. 3, 4, 5.)

Medical facilities: Yards employing 2,000 or 3,000 up to 5,000 should have 2 full-time physicians and one additional physician for each addition 5,000 men. Yards with less than 2,000 to 3,000 will not need full-time physicians. Yards employing up to 5,000 should have in the main dispensary 6 full-time nurses and 3 additional nurses for each additional 5,000. Additional nurses will be required for first aid stations. (p. 1.)

VII. Safety Clothing.

1. Goggles (p. 26.)

Impact resisting goggles of a type suitable for the particular job and also of a type meeting the requirements of the U. S. Bureau of Standards shall be worn by every employee exposed to the hazard of eye injuries. Practically every employee in the shipyard, with the exception of those working inside offices, at all time are either directly exposed to eye injury from the work they do, or indirectly through working near operations which are likely to produce flying objects. Except when temporary lack of goggles makes it impossible, each employee shall have his own pair of goggles. If it is necessary to reissue goggles to different employees, the goggles must be sterilized after each use.

2. Safety clothing (p. 29.)

In general the following should be observed: (a) Safety shoes or pull-on boots with cord or leather soles and heels; (b) Long underwear, union suit type (wool for winter); khaki trousers and shirt, or coverall, type of overall with a drop-seat and welders' leather uniform; (c) It is desirable that the outer clothing, unless of wool, be flame proofed; (d) Leather gloves. Burners' uniforms (overalls) shall be laundered at least weekly, except that if oil or grease is spilled on clothing, it shall be changed at once. It is desirable that arrangements be made by the company to have uniforms (overalls) laundered and flame proofed.

VIII. Plant Housekeeping (pp. 31 and 32.)

Wide, well-defined roads, aisles, and passages shall be laid out in the yard and shops and they shall be kept clear of obstructions and shall be kept clean and free from debris. An effort should be made to maintain a width of aisles and passages of twice that of the widest hand or power truck plus 2 feet. Aisles and passages should be defined by white of yellow lines painted on the floors. Materials or machines should not be permitted to encroach on these lines into the aisle.

VIII. Plant Housekeeping. (pp. 31 and 32.) Continued:

All staging platforms, ramps, stairways, walkways, or other walkway surfaces on shipways shall be kept clear of all debris, such as welding rod tips, bolts, nuts, and similar material. All deck areas on hulls shall be kept free of debris, and construction materiall shall be neatly piled, so as not to present a hazard to employees. All deck openings shall, as soon as practicable, be protected with guard rails at least 42 inches in height, set 12 inches back from the edge of the opening.

Miscellaneous Requirements

The safety of women welders presents several special problems which should be carefully considered while women are being trained and during their first several weeks on the job.

Women will at first be subject to excessive fatigue because they are unaccustomed to shipyard work. In their enthusiasm they are likely to overdo and will, under such conditions, be more prone to accidents and at the least, absences may folow. They should, until they become accustomed to the work, be cafefully watched by supervisors and if signs of fatigue are evident they should temporarily be given lighter work.

Welding screens (constructed of flameproofed fabric on wood or metal frames, metal on metal frames, or plywood sheets joined by rings) of a size sufficent to protect men working nearby from the harmful effects of the electric arc rays shall be used on all electric welding operations when practicable.

VI SUMMARY OF REQUIREMENTS FOR PHYSICAL EXAMINATION (PRE-EMPLOYMENT) AND MEDICAL FACILITIES IN SHIPYARDS

I. Physical examinations.

23 yards report.

17 - require examination (In 1 yard, for women only).
6 - do not require. 1 large but 4 parts do require

Union yards.

11 report
8 - require.
3 - do not require (In one yard, the union does not permit the examination).

II. Medical facilities.

23 report

17 yards have doctors and nurses on duty 24 hours.
1. yard has a doctor on duty certain hours each shift, then on call - nurses during the day and first aid men only during the night.
5 yards have first aid only. Of these, one has a nurse in attendance, and all have a doctor on call. all are small and have size which requires physician

MEDICAL EXAMINATION AND MEDICAL FACILITIES

Total employment	Plant number	
21,362	1.	Physical examination required - details not reported.
9,000	2.	No preemployment physical examinations are allowed by the union. First aid stations are located throughout the yard. Have a group hospitalization plan.
1745	3.	No women - no report.
20,805	4.	Company gives both men and women a thorough "industrial physical examination," including a Wasserman test. Clinic in yard with several doctors and nurses - open 24 hours a day. First aid stations about yard manned by trained nurses. If seriously injured, taken to Wilmington Hospital.
12,150	5.	All have medical examinations (Details not reported). Nurses and doctors in 24-hour attendance. Plant ambulance to take workers to plant hospital or local hospital."
816	6.	Give a brief or casual pre-medical examination. Have first-aid kits, handled by foremen or one tool-room attendant. Have 2 doctors on call. City hospital is about three blocks away - if hurt are taken there in a car or call an ambulance.
595	7.	No women. No medical examination given. Company has discussed this with a doctor and may begin it. Company has a complete first-aid room with a registered nurse and an assistant. A doctor is on call and hospital is nearby in case of an emergency.
5948	8.	Complete physical examination including Wasserman test. If Wasserman is positive, must take treatments. Well-equipped hospital and clinic open 24 hours a day - 2 doctors and a number of nurses. First aid unit opening soon on ship ways.
185	9/	No women. No examinations required. One foreman administers first aid. One doctor on call. Nearest hospital is 60 miles.
44,000	10.	Every worker has preemployment physical examination. Any injury is treated at dispensary and if necessary sent to a hospital. Minor medical care as aspirin, is given and patient referred to his own doctor. Dr. Gould claims they have better health and accident record than the telephone company. The dispensary and two first aid stations are in charge of Dr. Gould, with a staff of about 20 doctors on day duty and at least 3 at night. They make preemployment examinations and give medical care to families of officers and enlisted men as well as to employees. About 75 applicants for employment are examined each day. Corrected vision of 20/30 is required. Separate records are kept of industrial illness or injury.

Medical Examinations and Medical Facilities (cont'd)

Total Employment	Plant number	
18,771	11.	Have dispensary with doctors and nurses for first aid. Hospital in the yard may take serious accident cases or they may go to outside hospital. All applicants must pass physical examination. Industrial hygiene laboratory recently set up to take dust counts, etc.
2883	12.	Preemployment physical with few rejections. Doctor on duty certain hours each shift, then on call. Two nurses on days - 2 first aid men at night. Given aspirin but sent home if any fever. "Low accident rate."
220	13.	Have no preemployment examinations, no hospital. Have first aid sets. One woman painter is a trained nurse. Have doctor on call for any emergency - would use city hospitals.
14,129	14.	No report.
11,209	15.	Preemployment physicals have been done by two company doctors in separate quarters adjoining the "hospital" which is a dispensary run by the American Surety Insurance Co. One doctor on duty each shift; 3 nurses on first shift, and 2 nurses on each of other shifts. (no women employed on third shift). They expect there will be a new hospital which is definitely needed. This one was not even clean. Records kept of all calls. Give repeated medication, such as painting throats, if that will save work time.
42,639	16. ✓	All get an "entrance examination" before being accepted in the yard. Each department has a first-aid attendant. Machine shop has a sub-dispensary with a first-aid attendant - at all times. Yard has a complete dispensary or clinic with doctors and nurses in attendance for all shifts - with Naval and city hospitals near by in case of real emergency.
31,153	17. ✓	Company has a rigid preemployment examination. Have Wasserman test; if positive, employee must go to State Health Clinic. Miss Headley, head of hospital, keeps a strict check on this and if any one misses a visit she calls the person to know why and employee must continue these treatments until dismissed by the doctor. Have an up-to-date hospital with all modern equipment - perform minor operations here. There are 8 beds for women and 15 for men. Due to overcrowding of city hospitals and overcrowded home conditions, the Company is now keeping employees 5 - 6 days or more till recovered (formerly sent such cases to city hospital or home). White and Negro men were in one large room together — formerly had them in separate rooms. Hospital with doctors and nurses are open to all shifts - also several small treatment rooms, with nurses in attendance, over the yard, and stretchers at various places through the yard. Hospital has crutches of all sizes and some other appliances that are loaned to patients. The yard has its own laboratory with doctors and nurses.

Medical Examinations and Medical Facilities (Cont'd)

Plant number		
Total Employment 27,133	18.	Company has been giving physical examinations only "if some defect admitted", but Company official said going to begin giving it to new employees and to old ones as they come to the dispensary. Company has been handicapped according to U. P., by lack of doctors. (Employment service data reported rigid physical examinations required in this yard - agent does not know why the discrepancy). The Company now has two doctors and 13 nurses, several clerks and an X-ray technician. Hospital is open 24 hours a day.
10,622	19.	"Medical and first-aid facilities open at all hours."
16,347	20.	Pre-employment examinations by 3 doctors. Day shift has 3 doctors, 2 nurses, and 1 first-aid man. Second shift has 1 doctor, 1 nurse, and 1 first aid man. Third shift has 1 doctor and 1 first aid man. There are 8 doctors (3 of whom give physicals). The hospital is in the employment building outside the yard. There are 3 first aid stations in the yard. "Best accident record of any yard but Bath, Maine."
29,937	21.	Physical examinations basis of placement. Dr. Manley in charge of hospital and first aid stations. Colds are given only first aid but complete treatment is given any industrial disease or accident. Periodic examinations of crane operators, engine drivers, and of two girls using radium in testing metal.
8532	22.	Company gives a preemployment examination - does not include a Wasserman test. Has one treatment room with a first aid man in charge and 1 large first aid room with doctor and nurse - both of these rooms are open 24 hours a day. The first aid room is modern and well-equipped. Company has own ambulance - if an employee needs hospitalization, is sent to one of the city hospitals. Girls are permitted to rest, smoke, and relax in the rest rooms a reasonable length of time. If necessary can lie down and guardette will bring a hot water bottle to relieve cramps - if really ill, must go to first aid.
44,653	23.	Give preemployment examinations (Not Reported about Wasserman test) Have treatement rooms about the yard - modern and well-equipped. Day hospital in yard - all staffed by nurses and doctors. Have own ambulance and send to city hospital if necessary to stay over night. Hospital and treatment rooms are open 24 hours a day.
10,063	24.	Have a preemployment medical examination for all. Treatment rooms about the yard with nurses in attendance. 24-hour hospital and doctor service. Hospital has beds and all modern equipment - send to city hospital in own ambulance if necessary.
487	25.	Company gives no preemployment examination. Company has a first aid room in yard - have doctors and nurses in attendance on all shifts. (No women in yard now but have plans to employ them immediately).
10,796	26.	All women have to have preemployment physical examination, but men do not. Have splendidly equipped hospital at each of 3 yards - nurses on 24-hour duty. Workers come for any injury or for medical consultation Co. doctor on duty.

VI. Medical Examinations and Medical Facilities (Cont'd)

Total employment

NR 27. Physical exams. given to test eyes, blood pressure, lungs, etc. This exam. given for women. Agent not certain that exam for men is the same.

Have small first-aid dept. at present with a doctor and nurses, but a new hospital is under construction. (Is to have beds, operating room, x-ray equipment, etc.).

28,841
28. Pre-employment physical exam.

Medical facilities poor. One first-aid room in each yard with doctor and 3 nurses on first shift 2 nurses on second shift, and 1 nurse on third shift with doctor on call.

Yard hospital with own x-ray and wards for men and women hoped for and separate first-aid rooms for women.

A consulting doctor and a doctor in charge of yards who has a physician assistant in the West yard. There is no place for a girl to lie down, but if she is very uncomfortable, she is sent home provided she lives in greater Portland.
Thompson's Point which has 50 women has no nurse.

Copies of accident reports for women sent to field representative weekly.

12,500
29. All workers have pre-employment medical exam. and blood test.

An excellent hospital with doctor and nurse on first two shifts in attendance(constant). In number of doctors and nurses yard exceeds safety requirements.

On second shift till midnight, a nurse was on duty in first-aid room. On night shift, (only 2 women), a male nurse on duty.

Medical Examinations and Medical Facilities

Plant number	Total employment	
30.	48(Office)	No women on production. Have first aid but no nurses. Require physical exam. including Wasserman.
31.	39 909	If applicant for job is declared "eligible", she is referred for a physical examination. At present, the examination covers ears eyes heart and lungs. Blood pressure is taken only if it is reported as abnormal. A person may be disqualified whose physical examination indicates the presence of diabetes, ulcers, infectious disease, extreme nervousness, high blood pressure, or pregnancy. The examination as now conducted has proved to be quite cursory and a stricter examination will be given women as soon as the examination booths now under construction are completed. Married women will be given a pelvic examination! The doctors wish to prevent nervous breakdowns.
32.	2,300	Physical exams are cursory now. As a result found some cases of hernia, although no proof whether had hernia before employment.
33.	13,189	Director of training says that if exams were given, few workers would pass. (Social workers in Savannah tell of high rate of venereal disease and tuberculosis here and feel that physical exams must be given if women are to be expected to work in war plants. Physical exams not required.

VII Women Workers' Uniforms in Shipyards

No women in production in #3, 6, 7, 9, + 25
Women in welding in all plants but #13

I. Goggles

Plant Number	
1. B & W	In burner's class all girls were wearing goggles.
2. B & W	Not reported if required, but workers pay for their own goggles.
4. Welders only	Goggles required where necessary but few are worn - employee furnishes own when needed.
5. B & W	No report on goggles
8. B & W	Goggles furnished for drippers and burners - no glash goggles for welders available yet, but are needed.
10. B & W	Goggles required where necessary, i.e., grinding, chipping, welding, scaling, riveting, drilling at high levels, machining rough cuts, and while handling molten metals or chemicals in open containers. Company provides welder's goggles - Few goggles seen except on cutters. Women in structural shop welding wear shields but no goggles. Goggles are received only a few hundred at a time when they have thousands on order. The cup type goggles which they have, so limit vision, that they are a hazard on scaffolding and no spectacle type goggles are available.
11. B & W	Goggles for grinding and welding; said to be in plentiful supply.
12. welders only	Mine safety type goggles sold at first aid for less than price outside and can be prescription ground. Goggles worn under helmets by all welders seen. 3
13.	No report (women ships) No B & W.
14. B & W	No report
15. B & W	No requirements as yet - the safety director says he has 1000 goggles on order, but they are hard to get. He has devised a goggle of plastic with square sides fused to the front rather than bent, as he has found that plastic face shields usually break at the point of the bend when rounded. These square goggles were worn by grinders over their own glasses very successfully. They do give some distortion which he thinks can be corrected and they are too bulky for some jobs. They are not shatterproof but will give a clean break and are light and inexpensive. He feels that goggles will not eliminate flash burns. Alert workers do not get burned and those who are not watchful would never have the goggles in place anyhow and would have their heads turned sidewise. Most burns are from side flashes. Sterilize goggles with a phenol (15%) solution leaving them in about 3/4 hours, and washed with soap before and after. ~~(Man in charge of goggles says this is not true.)~~ Burners are issued goggles - Very few goggles worn in the yard, however he would like to have goggles for everyone. unfortunately they are not able to get enough goggles.
16. B & W	Yard furnishes goggles where needed, and welder's shields.

I. Goggles - continued

Plant Number

17. B & W Goggles furnished when needed.

18. B & W The safety director would like to require safety glasses and will when company approves plan.

19. B & W No report on goggles.

20. B & W Company provides goggles for burners and "those needing them" (not welders). No trouble getting goggles. Think welders need none unless prescription ground (which is done at cost). Few welders flashed by other welders. Sometimes on flat welding light reflected up seeps under shield and is reflected from rim of goggle into eye causing burn. Rule that welders wear goggles not enforced. Serious burn possibly only within 8 feet of arc. Flash burns perhaps 45-50 a day because all such report for first aid; 5-8 real burns a day. Only 8 lost time cases because of flashes. No fatalaties to Bethlehem workers. No goggles are worn routinely by welders. The safety man said they fog too quickly and are not needed as the worker uses her hand to shield her eyes from slag when she chips her weld!

21. Welders only Goggles are issued to welder and are sterilized and serviced.

22. B & W Goggles are furnished by company

23. B & W Goggles are furnished by company when needed.

24. B & W Goggles are furnished by company when needed.

25. No women Goggles will be furnished by company when needed (no women now)

26. B & W Goggles are furnished by company when needed.

27. Company furnishes necessary goggles for welders, burners and grinders.

28. Safety director says they will enforce wearing of goggles when they get a supply. (The labor consultant said she thinks the company failed to order them.) Burners wear goggles.

29. Burners wear goggles; welders not always.

30. No women on production.

31. From "Safety Rules": Goggles of the proper type should be worn by operator while working, e.g., anti-glash goggles for welders.

32. Welders wear flash goggles.

33. "Can't get goggles".

34. Those around welders wear flash goggles, but "it is not easy to get more of them".

Plant Number

35 Supervision has been lax in requiring goggles. Public address system tells in broadcasts about eye injury of worker in department because he didn't wear goggles. The Lieutenant Commander thinks full-vision goggles not necessary and that a worker can get used to cup-shaped goggles which they issue almost entirely. Have had difficulty in getting enough goggles and last shipment had to be returned because the side shields were inflammable.

From: Industrial Department Order #9-43
Approved goggles will be worn on any job where there is danger of flying particles and without exceptions in the following operations: grinding, chipping, scaling, handling molten metal, chemicals in open containers, r riveting, amchining rough cuts, drilling at high levels, cleaning with compressed air, and in or when working in spaces which contain dust, flying chips, etc.

Plant Number

36 Burners wore cup shaped goggles. Welders all wore hard hats to which the helmet face shield is attached (like sample in W.B. exhibit). Agents visited a ship where women were welding. Neither the welders nor the supervisor wore goggles.

37 Goggles are among items to be secured before employee starts to work. They are loaned by company with deposit of $1.00 which is refunded when goggles are returned in good condition. No report as to which jobs require goggles.

38 Welders required to wear goggles. Those working near welders are not required to wear goggles and agent saw many welders working on slabs (slabs here are in covered building, not outside) with work unshielded by screens and with other workers fairly close who were without flash goggles. (They may have been far enough away to avoid flash burns, since no one seems to agree at what distance a person has to be to avoid a burn.) Goggles are sold in the plant.

39 Workers will wear goggles but the trouble is they have been hard to get.

40 No report on goggles.

41 Approved goggles or face shields must be worn on any job when there is danger of eye injury and without exception in the following operations : Grinding, chipping welding, scaling, drilling, machining rough cuts, while handling molten metals or chemicals in open containers.

38.

VII Women Workers' Uniforms in Shipyards

W- Welders

II. Work Clothing

Plant Number

1 B & W — Slacks are required and hair nets for women on machines. Shoes with hard toes are required. Welder's masks and some protective clothing around shoulders, arms and chest furnished but women were not wearing fireproof head coverings. In burner's class, wearing heavy overalls or heavy shirts and pants, fairly heavy caps or bandanas.

2. B & W — Coveralls or slacks of some kind, head coverings and low-heeled shoes are required. Recommended hard hats, safety shoes, but not required. Must pay for own clothing, safety shoes and hard hats. Most women wore heavy, bulky clothes because of extreme cold even under cover (end of the ways were open.)

4. Welders only — Uniforms on order - some received - Tan fitted jackets and slacks with a narrow or safety leg especially at bottom. Caps on order, some received, tight fitting, light weight denim with visor, also wearing bandanas or railroad caps. No special shoes required, urge heavy shoes with low heels. Some wearing jumper style overall with regular overall jacket, with sweaters underneath. The uniform jacket is close fitting, (don't believe would allow for the use of a sweater underneath, which would be comfortable on the cool mornings and could be removed later in the day.) Caps ordered have no air vents. Welders all use the welder's hat or shield over a tight cap. Welder's shield costs $4.00 and gloves $2.00. Welder's leather outfit goes into many but most were wearing the overalls and overall jackets - some few had leather jackets.

5. B & W — No uniform required. Welders wear some type of garment as men - leather trousers, coats and heavy gloves; helmets are provided by company. Yard timekeepers were wearing slacks and heavy coats.

8. B & W — Uniform recently adopted - dark blue one piece coverall, ($4.00) snaps at ankles so can be fitted tight for certain jobs; long tight sleeves - some bought other clothing previously and are allowed to wear it. Some workers had several layers of clothing as well as long underwear under coveralls - working in the open. Hard hats are provided when needed; all workers on ways and platens wearing these. Welders must furnish own jackets ($10.00) and gloves ($2.00). Welders asked to wear boots covering ankles. Shoes with reinforced toes are required. Difficult to get all the desirable equipment. Safety engineer says he doesn't believe hard hats necessary on all burning and welding jobs. Company is trying to get some type of standard wool head covering.

10. B & W — No uniform required but "suitable clothing" of slacks or coveralls - cuffless coveralls, jumperalls or slacks with flat hip pockets are required. Blouses with sleeves, close fitting at wrists (if full length) and with sleeves without reinforcing (if short lengths) kept tucked inside at waist. Shoes with medium or low heels and closed toes. Safety shoes with reinforced vamps are recommended where weighty material is handled. Wooden soles are recommended where acids or conditions of excessive moisture and heat exist. Berets, caps, turbans, nets or kerchiefs with snug but not tight fit are required and must confine the hair completely. If brimmed or visor must be of non-inflammable material and stiff enough to act as a warning when striking machinery. If of net must be closely woven. Gloves when necessary, and of washable, non-irritating, non-inflammable material.

II. Work Clothing - continued

Plant Number

10 Leather gloves should be checked for rough seams that irritate and open way for infection. Many girls wore only hairnets or turbans with loose hair protruding; some caps. Safety shoes not required. Welder's helmets are provided to each girl. Leather arm and chest protectors bottoning in back have to be used by all workers on all shifts interchangeably as there are not enough for each girl to have own - no hard hats seen. Women in Structural shop - welding on scaffolding wore hard hats and a variety of shoes were seen. No safety shoes for women are available here or in Charlestown. It was said if safety shoes could be required, 6 to 10 broken toes a month with a lost of 2 to 3 weeks each could be prevented. Fire resistant clothing is not considered essential although burners should have flame-proof head covering.

11. B+W Required to wear suitable clothes. Must be made of durable denim or cotton, washable and conservative in color. Two piece slack suit or coveralls for workers on machine tool, bench work and welding; low-heeled, closed toe, solid leather shoes - preferably safety shoes. Hair covered adequately by turban, beret, etc. Ordinary hair nets not sufficient protection for this type job. Sleeves short or rolled up snugly to elbows or securely fastened at writst where wrist length sleeves are necessary for arm protection. High shoes for welders. Girls careless about hair in electrical shop and some loose clothing seen.

12. Welders only No written instructions but told to wear slacks and sensible shoes. Safety shoes advised but do nothing to help get them. Company store sells work overshoes, ear flap caps, and gloves. Both men and women wear unsuitable clothing first week, but after pay day they improve.

13. Women slacks - No burners or welders Asked to wear slacks and suitable clothing. Caps not required, no machinery - some wore turbans or bandanas - some no head covering.

14. B+W Slacks or coveralls required; couple girls in skirts in sheet metal department and no standard coverall or garment on the other women. Low-heeled shoes. Welders must buy suede jackets and leather gloves. Women can get safety shoes through the company. Head covering of some kind is required - bandanas, heavy snood nets or caps. One or two women were without head covering.

15. B+W The safety director and counselor of women recently submitted to new management requirements with request for authority of enforcement. Meanwhile girl checkers are running around scaffolding and cranes with bare heads and hair flying. The director was worried lest a checker get her long bob tangled up in a set screw or a hand drill when she puts her head down near someone's work, and wanted the girls to have their hair covered but did not seem concerned by the danger of falling objects which would seem to be a greater risk, one to which almost everyone in the yard is subject. Welder's helmets are sterilized same as goggles before reissued. (Man in charge says it is not true.) Shields issued to welders but no leather sleeves or gloves. Leather jackets and trousers - trousers are advised but not required. Safety shoes must have a steel toe, in his opinion, some will be available in April. Trying to get some to last two years instead of two weeks; will be more like a ski boot. Director prefers a fibre hat with a metal screening reinforcement which he says will resist pounding with a heavy bar. Very few hard hats or safety shoes worn in the yard.

II. Work Clothing - continued

Plant Number

16 B+W Women were wearing slacks or overalls with a shirt or jacket or a wind breaker. Welders wore heavy sweaters under overalls and jackets, protected by "welder's sleeves" of cowhide and asbestos cloth furnished by the yard. The company also furnishes welder's shields. Women were wearing various head coverings, bandanas, tight fitting caps or railroad caps. Company was planning to use a round cap of thin rayon with a drawstring in back, in order to tie the hair in. Cap will cost $1.00. Safety shoes had not been decided on. Women wore heavy low-heeled shoes.

17. B+W Not required to wear uniforms, but must wear safety clothing suited to the job. Slacks for those in the yard. Hair covered - heavy hair net and various kinds of caps. Wearing two kinds of suits - tan butcher boy type jacket, open in front, and slightly fitted, with a peplum in back covering the hips; short sleeves - made of medium khaki or denim; slacks - legs narrowed at bottom. The other is dark blue coverall with narrow belt and long sleeves - medium denim, visor cap. Flat heeled, closed toe, heavy shoes. Free gloves where needed. Welder's shield planned by company - two pieces of heavy canvas and stitched in or quilted between are pieces of imitation leather to keep heat from face. In a slot about size to cover eyes are put 3 pieces of glass - 1 colored and 2 plain to keep heat from eyes. This slot has a glove button on it, so glass can be removed and put in. This is used when there is not enough room for usual welder's shield. Knee pads also provided, made of imitation leather, padded with a cotton or wool mixture, padding made on the order of football knee pads. (No women welders as yet)

18. B+W No requirements as yet. Slacks or pants of some kind. Safety directory trying to have requirements approved by Company. Has been promised he may open store and sell safety clothing and equipment when new quarters for safety department are opened soon. He would like to require hard hats, hard-toed shoes and high top shoes for burners and welders. These shoes are not available. He says "difficult to set standards for welding clothing." Fireproofing would be required after every laundering. Some women wearing leather jackets.

19. B+W Safety, hard hats are required but not available. Safety shoes also hard to get - sold at cost. Welders and burners required to wear slacks with no cuffs. Some women wearing leather welder jackets or aprons.

20. B+W Require slacks and suggest material and color. Head covering required - caps suggested for welders. The hair covering met with rebellion - led by a man who told his checkers it wasn't necessary, and so they let it down including burners. Company provides welder shields, sleeves, spats for burners. Respirators for both dust and metal fumes and extractors as needed. Safety shoes advised.

21. Welders only Coveralls, hair covering and safety shoes required. Shoe advised has fiber toe - "Resist toe", $5.00. Company issues welder helmets and spats. One girl welder wears respirator, changing filters every 2nd day - fumes hurt her throat. Respirators are sterilized and serviced.

II. Work Clothing - continued

Plant Number

22. B+W No uniforms - safety clothing required - must ~~never~~ wear loose fitting coverall over sweaters or anyting tokeep them warm. Heavy, low-heeled shoes, closed toes. Hair covered always - use turbans and bandanas. Shields are issued by company when needed.

23. B+W No set uniform - Safety clothing recommended such as slacks and a windbreaker over a sweater or heavy shirt, depending on the job. Hair covered at all times with a cap or bandana. Safety shoes where necessary, low-heel heavy shoes. Safety department and guardetters check on clothing worn to prevent accidents. Company furnishes welders' shield when needed, also plastic shields on certain jobs.

24. B+W No set uniform - recommend safety clothing, slacks, overalls, etc. Slacks and windbreaker or 1 piece coverall seemed to prevail. Hair must be covered with cap, bandana, or net. Shoes are of low heel, heavy type. Shields and gloves are furnised when needed.

25. In ap, no women in production. However company expects to have women wear approved safety clothing - overalls with jacket or coveralls, Must wear heavy low-heeled shoes. Hair must be covered at all time, not yet decided on cap, but agree that cap should stand up above wearer's head. ~~Goggles,~~ gloves, etc., will be furnished when necessary. Personnel director has worked girls before and there they were required to wear "uniforms." He also says with great feeling, "May my God in Heaven forbid that I ever get mixed up with women and uniforms again." He further says that "If they don't all look like Greta Garbos they complain that the uniform doesn't fit, and they can't wear it." The Director says, "Why at that time we found ourselves with four tailors out at the plant, fitting uniforms!" So with that previous experience he has no intention of having uniforms as such. He says, "We don't want a girl here with fussy clothes on a band saw," So he expects to insist on safety clothing suited to the job.

26. Women are required to wear clothing, meeting safety requirements, but are not required to wear a uniform costume. Welders have to buy leather jackets, and trousers (cost about $16.00), furnished helmets, ~~goggles~~, gloves by company.

Hair must be completely confined by a cap. Bandannas, scarfs, nets and snoods are not acceptable for wear while working on or near moving machinery or in the vicinity of welding operations. Dark blue caps of the acceptable type, with elastic at the back and stiff visfors, may be purchased from the matron for seventy-two cents each. Leather aviator's helmets are recommended for welders. Shoes of sturdy material - low heels & closed toes.

27 Slacks or coveralls required; shoes with closed toes; and a head covering. Safety director said it would be difficult to get any additional safety clothing and equipment. Only a few women were noticed wearing welding jackets.

II. Work Clothing - Cont'd.

28. No requirement but told to wear coveralls, safety shoes, and head coverings. Welders supposed to wear leather jackets, trousers, and helmets. Leadmen wear hard hats but otherwise there is no enforcement of any safety clothing and ~~every-one~~ everything is worn. Women welders take off their leather jackets because they are too warm. Burners with cotton head scarfs burn their hair.

29. Require usual safety clothing but no uniform. Girls mostly wear turbans or blue visored caps like men's. Strong low-heeled shoes, sometimes boys' shoes, were worn. Safety shoes are not generally available; not enough made. Welders wear helmets.

Women Workers' Uniforms in Shipyards(Cont.)

Plant number

II. Work Clothing(Cont.)

30. No women on production.

31. Coveralls or slacks must be worn, but there is no standard type of uniform specified. They must wear low-heeled, close-toed shoes. No jewelry is allowed. Hard hats are required where danger of falling articles exists. Leather gloves required where necessary to handle sharp objects, rough material or lumber but not to be worn around rotating machinery unless absolutely necessary. Women doing welding wear leathers or other very heavy clothing.
If work with molten metal, should wear Congress type shoes, hard cloth pants and leggings or their equivalent. Galvanizing masks shall be worn by workers engaged in pouring babbit or galvanizing.

32. Must wear work clothes and work shoes, and none wear skirts. Only welders wear flash goggles and others have to avoid flash.

33. Wear variety of garments, usually slacks. Wear bandannas on heads, but curls not often covered. New rules require burners and welders to wear high-top shoes; others must wear closed toe, flat heel, strong shoes. Safety shoes are advised. No jewelry, even watches. Gloves to be worn by burners, welders, or those handling sharp edge tools. All welders, welders helpers and burners must wear cap. Safety hats are to be worn by all in fabricating shop or outside workers. No decorative ornaments may be worn(Includes hair ribbons).

34 Not much in way of definite requirements. Company believes shipstewards and grievance committee should handle such problems. Some wear safety shoes. Have welders helmets. Those around welders wear flash goggles, but "it may not be easy to get more of them." Workers are willing to wear safety helmets, but they are "hard to get."

35 Closely woven cotton slack suit or overalls. Safety shoes. No jewelry. Caps required and now given women by Yard. No mention of hard hats for women - few would need them. Bulletin on safety for all workers. Enforcements seem lax. Women's clothing requirements well met. There are still no steel-toes safety shoes available for women except in men's shoes.

See attached Sheet "Industrial Dept. Order #9-43"
(Attached to original copy only).

Women's Work Clothing in Shipyards

Yard Number:

#36. Burners wore cup shaped goggles and bandanas. Welders all wore hard hats to which the helmet face shield is attached (like sample in W.B. bulletin). They are supposed to wear hair nets beneath and some did. Hair nets were worn in the shops. Hard hats were more commonly worn in this yard than any other yard ~~yard~~ visited. The yard is small and crowded, with much traffic and confusion so that head protection is important. They are not worn in the shops but are supposed to be worn to the shops. Welders in this yard are supposed to be burners as well and pass both tests. (Agents visited a ship where women were welding. Neither the welders nor the supervisor wore goggles.)

#37 1. Regulation woolen Army trousers and shirts have been found to be the most practical, safe and economical warm clothes for women employees to wear. Reclaimed and rejected uniforms are for sale by certain licensed army outlet stores. Several such stores are located in this neighborhood, as well as in other parts of Brooklyn and New York.

2. Report for work in heavy, low-heeled shoes, - open-toe shoes are not allowed. Safety shoes must be bought later.

3. All employees are required to wear a helmet while working in the yard. Women must wear a bandanna or other suitable covering over their hair, such as a heavy silk hair net. A sweat shirt, heavy sweater, or windbreaker is needed for warmth.

4. Certain safety equipment is loaned by the Company on which a deposit of $2.50 is required. Other equipment, used for specific jobs, is bought by the employees, the payments for which can be made in installments. Arrangements for weekly payments on items purchased are made with the Safety Equipment Department.

5. Trainees in burning and welding are supplied leather protection by the Training School. When employees go into the yard, safety equipment must be purchased. Welders must wear full leather suit in winter. May wear long cotton sleeves for welding and sturdy cotton trousers in summer. Must always wear chest leathers and gloves.

6. Items of Safety Equipment and Clothing are listed below, with approximate cost.

A. Items to be secured before starting to work.

Item	Deposit	Where to get and how to pay
Helmet	$ 1.50	At Safety equipment Department loaned by company, with deposit of $2.50, which is refunded when items are returned in good condition. If lost, cost price will be charged.
Goggles	1.00	
	$ 2.50	

#37 (cont'd)

	Cost	Where to get and how to pay
Army Trousers	$ 1.50	Buy at any army outlet store for cash.
Shirt	1.00	
Total	$ 2.50	
Bandana or	$ .13	
Hairnet	.06	
Anklets	.45	May be purchased outside if acceptable to Safety Department, or in the Safety Equipment Department for cash.
Work Gloves	.49	
Sweat shirt	.81	
Khaki Coveralls	2.85	
Pro-Tek	.18	
Total	$ 5.34	

B. Items needed in yard or shop.

Item	Cost		Where to get and how to pay
Safety Shoes	($ 4.40 to	Various	To be purchased in Safety Equipment Department, pay deposit and balance in 2 installments. (4 if still in Training School).
	(4.85)	Sizes	
Leather Overalls	9.60		
Leather Jacket	7.88		
Total	$22.33		

C. Special Equipment for Burners and Welders are loaned by Company with deposit.

#38 Agent saw a fine display of safety equipment outside the office of the Women's Supervisor and same is displayed and described to workers in orientation course. However, this firm is lax in enforcing wearing of same. Makes no pretense at enforcement, except re. welders. Women welders are required to wear head-covering (bandannas) plus type of welder's helmet which covers top of head, plus gloves, plus leather half-jacket covering arms and chest. No requirement re. shoes except they be sensible, low-heeled shoes. Welders not required to wear shoes covering ankle and not required to wear woolen or fireproofed clothing. Welders are required to wear goggles. Those working near welders are not required to wear goggles and agent saw many welders working on slabs (slabs here are in covered building, not outside) with work unshielded by screens and with other workers fairly close who were without flash goggles. (They may have been far enough away to avoid flash burns, since no one seems to agree at what distance a person has to be to avoid a burn.) Goggles are sold in the plant, as are hard hats and welders' helmets. Other than these, or some special protective equipment perhaps, all clothing equipment must be bought outside plant. General clothing requirements for women are: Any type, but some type, of head covering (usually a net or bandanna); some type of trousers (may be overalls, coveralls, slacks, etc., of any material); heavy, sensible, low-heeled shoes, not necessarily safety shoes, but hard hats, although advised, like safety-shoes, are not required. Agent saw a few women working at small brazing machines and they were wearing plastic face guards. No safety caps are required for women, but this is probably due to fact women are not working at dangerous machines. Chief problem brought to agent's attention, by Navy Inspector who sees women working in the hulls, is the need of making and enforcing rule of wearing hard hats, since tools, etc., are so often dropped in the ships. (This last is confidential, since inspector volunteered information outside the yard and is not supposed "to talk.")

#39 Few rules and not much effort to enforce them. Women must confine hair (bandannas, etc.), must wear some kind of trousers or slacks in the yards, and sensible shoes. No safety-shoe requirement. Want workers to wear hard hats on shipways but they often won't wear them. Workers will wear goggles but the trouble is they have been so hard to get. Welders' equipment:- helmet, jacket, goggles, gloves. Safety Department tries to check up, and encourages safe clothing.

#40 The clothing the women wear is a matter of some concern to the Navy Yard. An attempt is being made to establish standard safety clothing. But this is done individually by shops, and the use of the standard clothing varies considerably. In some shops all women are required to wear it; in others there is no regulation. The uniform adopted--where it is adopted--is a one-piece dark blue denim, which looks both serviceable and attractive. In the outside machine shop, all the women wear this suit, and the monitor of this shop has succeeded in obtaining a cap with a visor and a small snood, which is very good. The women in this shop also all wear safety shoes with steel toes. This uniform costs either $4.62 or $3.50, the difference being due to small variations in the style. Some of the girls have bought dark blue silk uniforms for "parade" use, at $8.22 (the girls in the shop have organized a drill team).

Use of this uniform elsewhere, or of similar clothing, is sporadic. Shop 17 women all wear one-piece blue denims, and many individuals throughout the Yard have adopted them. There is, however, general difficulty in enforcing the use of safety clothing, because of the lack of coordinated effort and the fact that supervision is slow to accept the responsibility for it.

In general, however, the clothing is moderately safe. There is greater danger from wearing improper shoes than from wearing improper clothes. Many women not only do not wear the safety shoes; they do not wear sensible shoes. They have been observed around the Yard, in the shops, and even on the ships, in toe-less shoes, sandals, and other unsafe footwear. One crane operator had a serious fall from a ladder, resulting in both arms being broken, partly because she was wearing "wedgies," which had no heel to catch on the rung when she slipped from the ladder.

Wearing hair covering is also required, but is not always enforced. The most frequent type is the bandanna, though caps are also in evidence.

The chief monitor of the Riggers and Laborers Shop has succeeded in getting the women in that shop to wear hard hats whenever they go aboard ship, and to wear bandannas under the hats. In other shops, the hard hats are worn with varying consistency, and in some shops no attempt is made to get the women to wear them even when working on the ships. (No report on welders' clothing requirements).

#41 a. A one-piece dark blue safety coverall is recommended. It is not supplied by the company. There is a state law (which the Director of Women's Personnel strenuously objects to) to the effect that if a specific piece of clothing is required it must be furnished by the company. Therefore the company does not require this particular coverall.

Safety shoes are sold on the premises, and shoe certificates are obtainable on request, so that a shoe stamp does not need to be used.

b. There is no strong observance of safety regulations. On the whole, the clothing is not generally too bad, and relatively few of the women wear

#41 (continued)

loose sweaters, open-toes shoes, or other poor work clothing. However, the safety department is not sufficiently strong either to conduct a good educational campaign or to bring pressure to bear. Supervision does not take sufficient responsibility to insure the compliance with clothing regulations. About the only generally effective clothing-practice is the use of hard hats throughout the Yard.

T A C O M A D I V I S I O N

Safety Clothing for Women Employed at the Seattle-Tacoma Shipbuilding Corp.

While on duty at the Seattle-Tacoma Shipbuilding Corp. all women employees whose duties require that they work in shops, slabs or any other location where the use of safety clothing is indicated are required to observe the following regarding safe wearing apparel:

A. Coveralls or jumperalls with long sleeves that fit close at the wrists shall be worn.

B. In all occupations where weighty material is being handled, safety shoes with reinforced vamps are required. In other occupations where the nature of the work would indicate special protection must be worn.

C. Berets, turbans, nets or kerchiefs, with a snug but not tight fit, shall be worn to prevent the hair from catching in moving machinery or from becoming ignited by sparks or flame. Head covering must confine the hair completely and in all cases where there is a possibility of falling objects a "hard-hat" must be worn also. If a net is worn it shall be closely woven and should be of the non-run type.

D. Gloves shall not be worn around moving machinery. Gloves should be worn when necessary to protect the hands against sharp objects remote from moving machinery. The wearing of specially treated gloves and the use of creams, hand lotions etc. will be required where the nature of the work demands their use. Leather gloves should be carefully checked for rough seams or other objects as continual irritation causes infection.

E. Wrist-watches, earings, neck-laces, bracelets, or finger rings must not be worn.

F. Approved goggles or face shields must be worn on any job where there is danger of eye injury and without exception in the following operations: Grinding, chipping, welding, scaling, drilling, machining rough cuts, while handling molten metals or chemicals in open containers.

G. Women welders will be required to wear high top shoes, leather jackets, leather overalls, hoods and leather gloves. In addition to wearing hoods, women welders are subject to all provisions in paragraphs C and E.

#41 (continued)

H. Women will be provided with copies of the Safety Code which, in addition to the rules above, must be studied and observed.

I. Foremen and Leadmen shall be responsible for the strict compliance of all rules and safe practices.

J. Foremen and Leadmen must impress upon women employees the necessity of wearing safety clothing and that offenders against these rules are subject to disciplinary action.

SAFETY DEPARTMENT.

#35
"Industrial Dept.
Order #9-43"

attached to original
only

VIII Plant Housekeeping in Shipyards

No report

Plant Number	
1.	No report.
2.	No report.
3.	No report.
4.	This is a new yard and well laid out, benefitting from the experience of their parent company. Roads are wide, with provisions made for vehicular and pedestrian traffic, and all must keep within own boundaries. There is the usual traffic of switching railroad cars, trucks and autos, plus the yard cranes with their heavy, overhead loads. However, great care is exercised by all, minimizing the dangers. The general housekeeping in the yard was especially good. The shops are all new and again the experience of the parent company was used; so they are good and some were especially so. Attention had been paid to the welfare of the workers. Machines and workers were well placed, aisles were wide and unobstructed. 1 shop (no report which) had been equipped with a blower system in order to heat it, since girls were employed. Recall no slippery floors. Steps to a balcony in 1 shop were narrow and rather steep, but girls didn't use these often. (Agent spoke of this to foreman.) No report on ship conditions.
5.	No report.
6.	No report.
7.	No report.
8.	No report.
9.	No report.
10.	No report.
11.	The very smooth running, harmonious atmosphere of this Navy Yard and their apparent success in introducing women to work in more than 2/3 of the 21 departments indicates not only that the officers are in sympathy with the idea of using women but that they have given careful thought to preliminary planning and organization. Working conditions are excellent (in electrical shop) and the work is perfectly suited to women.
12.	No report.
13.	There was a pleasant atmosphere about the whole place. The company has been awarded the Navy E. As it is a small place the workers all ~~felt~~ feel closely related to the finished product.
14.	No report.
15.	No report.
16.	No report.

Plant
Nu

17. This is an old yard, and during the last war some additional ways were built but not used and which have not been used till the increased production in this war. So while employment and activity in the yard has increased tremendously, the company still had room to expand. The yard is not crowded, but there are some narrow obstructed curves in the yard that must be approached cautiously by both vehicular and pedestrian traffic, or there might be some bad accidents. This yard has many outside cranes and a number of railroad tracks over which cars are switched back and forth, and in addition, there is the auto and pedestrian traffic as found in a large yard. There is no definite boundary line separating pedestrian and vehicular traffic, but all must observe safe conduct in the yard.

Some foremen in this yard dismiss the women employees 5 minutes before the shift is dismissed in order that they may get ahead of the rush.

The general housekeeping in the yard is good, with especial attention having been given to the stacking of material.

18. On the boats in outfitting docks, many workers were crowded on each boat (in fact some question has been raised as to whether there are not too many workers on each boat). There is an appearance of general confusion and walking must be done carefully, even on the top decks because of the many pipes and valves which are found on a tanker. Also, on boats it is very likely to be true that welders' lines are strewn around everywhere. Climbing up and down longladders is required to get into the fuel tanks to do welding and to do various other types of work in the boats. For a time the ladders are temporary wooden structures.

19. No report.

20. No. report.

21. No. report.

22. This is the most compact yard that agent has seen, and if there are railroad tracks, they are on the outskirts of the yard and not where the workers are going about. There is not the activity in this yard that has been seen in the other yards. There are some cranes, but these are very near the ships or in the shop, whereas in other yards they are about in many places in the yard. Much of the yard is hard surfaced and so there is not the dust when the wind blows. Roads are wide and well laid out. There is not so much material in the yard, and this is neatly stacked.

The shops are small and as a great part of the work is done on the ships, the shops seem rather inactive. The shops are neat and orderly with wide aisles. The workers are well placed and there was no crowding. As agent observed, the machines seemed well guarded, and noticed no unsafe machine.

No report. Did not ask to go on the ships, though there were girls on them. Person in charge of women has not been on the ships yet, though women have been on the ships for few weeks. However, she expects to make arrangements to go on the ships before long.

23. This is a new yard built by a company that has many yards and so could benefit by previous experience.

There is much activity in this yard, many railroad tracks, switching cars back and forth, and the vehicular traffic that goes with a busy yard. In addition to this traffic, there are numerous cranes with their heavy overhead loads. (At time agent was in the yard it was very windy, a crane took a large piece

continued

Item Number

23 (cont.) of steel up, but had to put it down again, as the wind was blowing it so hard that moving it was too dangerous.) There is no boundary line for pedestrian and vehicular traffic but all are taught to observe safety rules and so the danger is lessened. The roads are wide and well laid out.

This yard is not hard surfaced and as the ground is bare it was dusty and especially so when the wind blew. Material is stacked over the yard in orderly fashion.

Shops are new and patterned after like shops in other yards of company; seem to be well planned and are not crowded. Aisles are wide and not obstructed. No slippery floors seen.

No report or information on condition of ships.

24. This yard has been in existence since 1840, but apparently foresaw their needs and had room to grow, even though it is reasonably close to Baltimore.

The yard is not crowded, but has numerous railroad tracks with much switching of cars back and forth, and the usual automobile traffic. In addition to this, there are many cranes in the yard, being used for loading and unloading railroad cars, and in moving various overhead heavy loads.

There are no separate lanes for pedestrian and vehicular traffic and if the workers were not well schooled in safety, accidents would likely occur frequently.

The yard is not hard surfaced, and so it is especially dusty when the wind blows.

As observed by agent, the shops seemed in good order and were well speaced and laid out. There were not so many workers in the shops at time of visit, much of company's work is done on the ships.

No report on ships. No women on the ships - too much climbing; some places don't always have the gang planks. The jumping and climbing is not suitable for girls.

~~25.~~ There were a few unenclosed steps on the outside of buildings, leading from first to second floor. As great majority of girls using these steps wear slacks it didn't seem particularly bad to agent. However agent suggested to women's Personnel Relations Officer that yards employing girls had enclosed the steps.

25. No report.

26. "The general working conditions throughout the yard seemed excellent."

VIII. Plant Housekeeping in Shipyards

Plant Number

27. Food problem is one of major concern to workers.

Some women have been employed to work both on hulls of boats on the shipways and on boats at the outfitting docks.

President of Company said that

Objection to women - men and women on ships were inclined to spend too much time loafing around together, that men were not keeping at work because women were around, and that production was being hindered. Management of women on boats considered a problem by police. Women who are somewhat mature (or at least in the twenties) have worked out better in yard than younger girls according to industrial relations director.

Another objection: Many of inclosed places deep in boats are very hot in summer and working conditions are far from ideal. In some places welders have to use respirators and sometimes blowers are installed for welders. Women are generally smaller than men and according to coordinator for women could do welding better in cramped quarters.

Policy is to insist that women be willing to work on boats and on platens, which are in the open, as well as in shops, where there is protection from weather and working conditions are generally more pleasant. One volunteer job for women is work which requires worker to go on scaffolds which are built along sides of hulls. A few women have volumteered to do welding while working from scaffolds and one girl was seen doing this work on one hull.

Climbing up and down wooden ladders, which looked quite sturdy and were securely fastened to some part of ship. Usually there was a hand rail to one side.

In winter time some of the work inside the decks and cabins on the boats might be more pleasant than some of the work done on the platens where workers are always exposed to the weather. In hot weather or in parts of the boats which are enclosed, working conditions on lower parts of boats would be very unpleasant. A few women were reported to be on the lowest decks of the boats.

What to do with women on boats was the big problem. Upgrading may help the problem.

28. Women show tremendous courage in getting to work through the severe winter roads covered with snow and ice. Have posters made by artist working in yard to help combat absenteeism. Girls frequently have to wait around 2 hours for men with whom they ride to work.

Burners more than welders get "fume fever". Women in charge of personnel relations has one assistant whose job it is to keep an eye on everything.

Women are working in a greater majority of departments and doing a greater variety of jobs than in almost any other shipyard the agent had visited.

VIII. Plant Housekeeping in Shipyards. Cont'd.

Plant Number

29.

28.(Cont'd.)

The general working conditions in this yard are rough and hard as in every shipyard:

On the flats - Much of the work is out of doors on the "flats" where steel plates or parts are laid on the ground, and the work on them, such as welding, burning, riveting is done in the open air, parts being moved about by great cranes. This is pretty cold work with the thermometer below zero and a high wind blowing but only two days all winter was the work stopped and then not for everyone. The workers stand, sit or crawl around as the job demands.

On the ships(either while they are on the ways or in the water)- Welding and riveting on scaffolding is still more largely mens' work and the erecting of heavy machinery or pre-fabricated parts. Girls do a variety of shipfitting jobs after the ~~boat is launched~~ boat is launched. Lagge ventilating hoses which pump in fresh air and suck out fowl air.

Women go on a boat as soon as it is launched.

Work in the shops or departments - The greater part of the women are here.

At the Hardings plant, women doing practically all jobs. It is a prefabrication plant.
Facilities at Hardings were far better than at yard at Bath. (New building in 1940). The girls had metal lockers.
In pipe shop, fingers made tender.

28. Every three or four months, a department when caught up with its work will shut down to give workers a day off.

Two women were seen on board ship. Women do torch burning on the flats out-of-doors, on scaffolding, and on ships. Bridge cranes(Wright 5 tons) are operated by women in the assembly shops. Workers in welding training were advised of the necessity of keeping their eyes open and watching their steps as a shipyard is a hazardous place. Two girls were catching rivets on staging about 12 feet from the ground. Women go on boat to clean. Crawl through small hole. It is so unpleasant that workers are kept inside only two hours at a time and after two days are changed to another job. Some workers get panicky. The first cleaning on the boat is heavy.

One of the most difficult personnel problems is that of the drinking in the yard of which there is a great deal. Lunch boxes are inspected ~~entering and leaving~~ the yard. The best approach to problem would seem to be the provision of adequate toilet and rest room facilities where a worker could get warm and adequate supply of places to eat. Recreation could be a counter attraction.

Plant Housekeeping in Shipyards (Cont.)

Plant number

30. No women on production.

31. ~~Omitted. To be collected later.~~ 6/13/43. See typed sheets following

32. Buses are very crowded but transportation problem is not bad. (Agents found it took half an hour for ~~each of~~ last of employees to get on buses at end of first shift.

The personnel director says in regard to working on boats that work is very intricate and working conditions are sometimes deplorable. Men are crowded together like sardines. Women can't be used on boats.

Toilet facilities are inadequate. Have woman to keep them in order. Have one toilet at end of yard and women from other end have to use it.

33. Will not use women on ships.

The biggest problem is lack of supervision for new and green worker, not lack of manpower.

Laundry problem - Takes a week to 10 days to get laundry back and single persons often can't get laundry done at all (in small lots).

Company teaches right and ~~wrong~~ Safe way to do job. Injury rate for women has been low. Eye injuries lead in accident rate. Workers won't wear goggles and they are hard to get.

Discipline: If workers are kept busy they won't have time to get into trouble. A woman supervisor talks to few thoughtless women and this is a help.

Plant Housekeeping in Shipyards (Con't.)

Plant number

31. There has been no great influx of women from any distance because housing accommodations for them are limited. However, the yard does not want to expand the area of recruiting women until more housing accommodations are available for women. When the new dormitories for five hundred women are completed, it seems highly desirable to expand the area of recruiting so there can be more selectivity and fewer women with small children need be employed. Only women who live within commuting distance are employed be-cause of limited housing for women in Vallejo.

(A number of trailer camps have sprung up in the vicinity of Vallejo in which extremely sub-standard living conditions prevail. Because of crowded housing, workers are commuting from as far as Sacramento, 65 miles away.)

Housing projects in Vallejo for family units. Dormitories for women with capacity of 143. Men guaranteed housing in a dormitory if they come alone. If men bring families, housing accommodations are not provided.

There are tentative plans for providing a special indoctrination course for women who are to work aboard ships and submarines.

In the shops the workers are said to prefer the shorter lunch period (20 min.) in order to be able to stop work at 4 o'clock. They consider the longer day as something of a punishment, and it is in fact occasionally used as a disciplinary measure. Workers who hang around the time-clock before time to punch out, for example, are sometimes put on the 8:00 to 4:40 schedule for a number of days because of this infringement of rules. Workers out-of-doors, on the ways, and on the ships, have a 40 min. lunch period, working from 8:00 A.M. to 4:40 P.M. It is believed that the nature of the work makes a longer mid-day break desirable.

Among the women the proportions throughout the yard who are on the day or swing shift is probably somewhat higher than for men. Most of the women working from midnight to 8 P.M. are in the shipfitters, inside machine, and electrical shops. Some shops have no women on the 12:00 to 8:00 shift, others have established this shift as purely voluntary for women. The only girls under 18 years of age are a few messengers. None of whom work on the graveyard shift.

A woman doing scaling aboard a submarine will stop and rest her arm when-ever she needs. It seems clear that in the yard there is a reasonable attitude on the part of supervision concerning necessary rest periods.

The canteens may be used by workers on shorter lunch periods. Occasionally these have benches where lunches may be eaten. Chow wagons are stationed along the docks where needed. It is expected that this type of service will be expanded.

Need for Transportation: There is close planning of both share-the-ride program and the bus service. As need arises, adjustments are made be-tween them in order to achieve the maximum service.

Women have not had any serious accidents out on the ways or ships, where accidents are most likely to occur. For certain jobs involving the possi--bility of respiratory hazards, special studies are made of both the workers and the working conditions. Wherever there is danger of toxic fumes, the laboratory takes samples of air, which are tested for impurities, and deter--mines what precautions are necessary. Such tests are constantly being con--ducted all over the yard.

A hazard in the painting department is the lead in pigments. Especially in spray painting, the worker is exposed to the danger of inhaling metallic pig--ment without lead and substituting non-toxic pertroeum spirits in laquers, in place of benzol, which is toxic.

In Vallejo, there are seven nurseries for the care of children. (One at Mare Island). Bus service to nurseries and from there to yard is not al--ways adequate. One mother had to quit work because she lived two miles from the nearest school and there was no bus service to take her to the nursery.

Yard conditions: To act as liason between men as supervisors and women as new industrial workers, also shop coordinators and monitors, shop coordina--tors have among their duties the handling of grievances and complaints, assist in conducting safety program, make spot checks of rest rooms and locker rooms, etc.

Conditions of work: When women are working in isolated corners on the ships, deep in the holds or in the bottom deck of a submarine, the advisability of having men and women together might be questioned. This is particularly true when because of the small hatches to climb through and the numerous ladders to go up and down, young women rather than older women are needed for these jobs.

Women are employed in shipfitting shop, sheet metal shop (women worked both in shop, out on the ships, and out in open in yard on bulkheads, silencers, ventilating systems, etc.) includes inside machine shop, ordnance shop, cen--tral tool room and outside machine shop (small shops all over yard). (In a c uple of instances women have been sent out on the ships from this shop (for machine installation). The master did not want to place women on ships until absolutely necessary, electrical shop (for the most part workers are out on ships and ways, battery shop, testing platform, and small auxiliary shops near the docks and ways), pipe and copper shop, joiners and shipwrights, paint shop, paint factory, welding and cutting (women do mainly slab welding in the shipfitting shop or on slabs out in yard, welding subassemblies of various types and sizes. Women have done most of the welding on some of the landing barges made at the Navy Yard. They do a small amount of welding on new construction and on repair work as well. Only one woman is rated as a gas welder.

Women are also in riggers and laborers shop. Women fasten snorters and slings to materials to be moved, and help guide cable lines and parts to proper posi--tions. Women are doing the crane following but not the signalling to the crane operator which falls to the riggers. The women do not work with loco--motive cranes, which might involve task of coupling and uncoupling freight cars.

Women are operating electric bridge cranes in the shops, riding in the over--head cabs. They also control the operation of some of the overhead cranes from the floor. One of the women operating an overhead crane had worked in a logging camp for 14 years, running a donkey engine.

In the shops, on the docks, ways, and ships, women do cleaning and sweeping. Women act as safety watchers on the mezzanines of outside cranes and gantries to see that nothing is in the way of the lift being made. Women work in foundry, print shop, pattern shop, supply transportation, and public works.

~~Work on ships, ways and drydocks: Women aboard ship do electrical lay-out, electrical installations, and battery readings on submarines.~~

From Women's Occupations:
Most of the work on ships, ways, and drydocks is definitely not in conformity with normal standards of working conditions for women as advanced by the Women's Bureau. The cramped quarters, close juxtaposition of workers, awkward and uncomfortable positions in which work must frequently be done, frequent exposure to outdoors make much of the work undesirable for women. Also, the inherent nature of work on ships and ways involves intermittent periods or waiting which are apt to give rise to complications when men and women work together. It is recognized that there are more problems of discipline on the ships than in the shops.

Work on ships is an example of where the circumstances under which the work is done is of more importance than the task itself in considering the suit--ability of jobs for women. It is also an example of where more care must be taken in selection of the women for the job, and some shops in the Yard re--ported that they were more particular as to whom is sent out on a ship. Good physical condition is extremely important because of the climbing around that is necessary on scaffolding, down hatches, around open hatches, and be--tween decks.

Women have been used on ships and ways at Mare Island since around September or October 1942. They are used primarily on submarine repair and new con--struction where crews do not live aboard ship.

Women from the shipfitting shop were placed on work aboard ship about Jan. 1943. They work on both new construction and repair jobs. The women act as helpers to the shipfitters running errands; carrying tools, equipment, and materials; bolting up plates; holding plates in place for welders; dri--ving wedges to hold plates in place, etc. This work should be considered partially suitable rather than unsuitable for women.

A few women are doing rivet heating and passing, heating the rivets in a small furnace, pulling out the red hot rivets with a tong and passing the rivets to the riveters. Some women also do rivet catching using funnel-shaped buckets. Both jobs should be considered partially suitable rather than unsuitable. Women should be carefully selected for this work because of the necessity of climbing around and having a good sense of direction in tossing or catching rivets.

Women are doing welding on both new construction and repair work. The majority of their work is tack welding, but some do straight seam welding as well. Women have done practically every type of welding in construction of landing barges out in the open yards. A few women are doing burning on new construction.

Women selected for either burning or welding on ships should be very physically fit. They must be quite agile because of the necessity of climbing around and at times working in very awkward positions. They must not be subject to respiratory disturbances which will be aggravated by the fumes from welding and the bad air down in the holds of the ships.

Women from the sheet metal shop assist on the installation of ventilating systems, lockers, metal furniture etc. They get material and supplies for the sheet metal workers, drill holes, put in screws and bolts, buck small rivets, hold parts in place which are being bolted up by men, etc. Some of the work is too heavy for women, but there is much that they can do very well.

Some of the typical electrical jobs performed by women aboard ships include:

--Fetching and carrying equipment, material, and supplies for electricians

--Cutting wires and cables for lights switch boxes, etc.; running through the wires and cables and strapping them up.

--Skinning armor off cables; attaching lugs, fittings, etc., to the ends of cables

--Putting indentification tags on cables

--Taking battery readings on submarines

--Assisting on electrical tests

--Assisting on installation of telephones, switch boards, instruments, instrument panels, fuze boxes, switch boxes, etc.

A few women go aboard the ships and make small pencil sketches of various electrical installations which have been changed from the original engineering blueprint.

Women are masking furniture, lights, fixtures, etc. in different parts of the ships before brush painting on the ships.

Women were first started this work down near the bottom of the ships in drydock, and were then gradually moved higher up on the scaffolding as they became accustomed to the work.

Women have been used on scaling since about October 1942. They were first started on scaling out in the Yard and then placed on the ships.

Much of the metal on the ships is prepared for painting by wire brushing. Women are doing much of this work using wire brushes varying in size from 2 lbs. to 15 lbs. This work is strenuous when the larger brushes are used not only because of the weight of the brush, but also because of the vi-bration, torque, and necessity of working in all positions sometimes holding the tool at shoulder height. There is a considerable torque in holding the rapidly revolving brush against the metal.

The vibration is known to disturb the menstrual cycle of women. Wire Brush-ing with heavier pneumatic tools is of questionable suitability for women for the same reasons as discussed in connection with scaling. The same factors should be borne in mind in placing women on even lighter wire brush-ing.

There are supposed to be blowers in the holds of the ships where wire brush-ing is done so that the dust, metal particles, etc. will be drawn out of the air, but in some places no blower systems were observed. The workers should also be wearing respirators and goggles for this work but not all of them were observed to be doing so.

Women sometimes clean the insides of tanks which necessitates crawling way down into the holds of the ships and submarines and going inside the large tanks. Scaling guns, wire brushes, cleaning solvents, and water are used for this work. The job is hot, unpleasant and dirty.

Some of the male supervisors were reported as being hesitant in asking wo-men to do this kind of work because of the general undesirability of the job. This is an example of where the conditions of the job may be such that women cannot adjust to the work, and the arduous nature of the work may re-sult in cumulative fatigue. It is of dubious suitability for women, the women should be carefully selected, and the effects of the work on women should be watched.

Women are assisting in putting up rope life lines on the ships. On the submarine and ship repair work there is much grease, oil, old paint, etc. which present a potential fire hazard to welders and burners.



#10 #11

BOSTON AND PORTSMOUTH NAVY YARDS

The several departments of both the Boston and Portsmouth Navy Yards showed such a wide variation in the washing facilities offered women (and men) that one can only feel that the Navy Department circular letter 4488-979 of February 3, 1942, (quoted on P. 40 of Bull. of Infor. to All New Emp.), directing that "all Navy Yard Workmen will furnish their own towels and soap," is the cause. This omission which, besides causing inconvenience and tending towards dirty rather than cleanly habits, must cause a good deal of waste time. If workers have to bring soap and towels, keep them in lockers go and get them out and put them back every time they wash their hands, time so spent must mount up. In all the yards, the office workers' rest rooms had soap and paper towels (see Navy Dept. Circular letter above mentioned).

Some shop Masters, and the whole South Boston division had managed to get soap and towels for all women's rest rooms. Others had neither soap or towels.

Some sanitary drinking fountains were provided, but the Navy circular letter states "where individual cups or glasses may be necessary, each individual will supply his own and care for same."

How much inconvenience this would make in summer weather it would be hard to say, as we were there on a cold winter day, but the facilities for washing and for drinking water seem hardly adequate and far from uniform.

The same is true of lockers and a place for women to change their clothes. In most shops they are ample, in others acknowledged to be inadequate. This is doubtless due to the difficulties of arranging facilities for a new group of workers under pressure of production, but there seems to be need of a woman personnel officer to work with the various masters and production officials on some of theseproblems that have been brought into prominence by the entrance of women into the Yards.

OCCUPATIONS

SHIPYARDS - 1942

U. S. DEPARTMENT OF LABOR
WOMEN'S BUREAU
Washington

JOBS ON WHICH WOMEN ARE EMPLOYED IN SHIPBUILDING (Construction yards and repair yards) - October 6, 1942

Tack welders :
Electric welders : Mainly subassembly welding and not welding
Acetylene welders : on the ways
Spot Welders :

Acetylene burners (flame cutting machines)
Welding checkers
Shipfitters' helpers
Sheet-metal workers' helpers

Electricians' helpers (wire electrical fixtures, repair electrical cords and miscellaneous equipment)
Machine tool operators: drill presses, lathes and bolt cutters
Painters
Optical workers
Foundry workers

Power sewing machine operators and hand sewers (making tarpaulins, clothing bags, slip covers for furniture, mattress covers, etc. in Navy yards)

Loftsmen helpers
Pattern makers' helpers

Tool room keepers
Stockroom and warehouse attendants and clerks
Material chasers

Crane operators
Electric truck drivers and motorcycle drivers
Laborers

Shop clerical workers

ADDITIONAL JOBS SUGGESTED FOR WOMEN IN SHIPBUILDING

Plate shop: buffing and polishing

Paint shop: brush painting, spray painting, staining, puttying removing paint, etc.

Rivet heaters
Rivet passers

Electrical shop: armature and coil winding; wiring; repairing and assembling switchboards; soldering, insulating field coils and transformers.

Machine shop: lathes, milling machines, grinding machines, drill presses, shapers, profilers, broaches, automatic screw machines, gear cutters, thread millers and nibblers.

Tool room: machine tool operations on reamers, cutters, end mills, fixtures, gages, etc., operating drills, millers, grinders, shapers, lathes, planers and slotters.

Tool grinding

Bench work of filing, burring, lapping, etc.

Sheet metal shop: spot welding, soldering, riveting, drilling, operating shears, brakes and punch presses; and light assembly operations on metal lockers, boxes, shelves, etc.

Pipe and copper shop: Helpers to coppersmiths and pipefitters on light work
Power hack saw operator
Pipe bending and threading
Drill press operator
Solderer

Boiler shop: Operating drill presses, shears, and punch presses, and doing light riveting.

Boat and joiner shop: Woodworking machines (planers, routers, shapers, lathes;
Band saws and drum sanders)
Nailing and gluing wooden parts
Caulking small boats

Draftsmen and Tracers

U. S. DEPARTMENT OF LABOR
WOMEN'S BUREAU
Washington

JOBS ON WHICH WOMEN ARE EMPLOYED IN SHIPBUILDING
(Construction yards and repair yards) -- October 6, 1942

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Foundry workers

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Loftsmen helpers
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Tool room keepers
Stockroom and warehouse attendants and clerks
Material chasers

Crane operators
Electric truck drivers and motorcycle drivers
Laborers

Shop clerical workers

December 5, 1942

Miss Beatrice Oppenheim
79-01 35th Avenue
Jackson Heights, N.Y.

My dear Miss Oppenheim:

In answer to your letter of December 1st, we have information to give you on kinds of jobs women can do in shipyards, and in connection with this the enclosed statement from the Kaiser Company will be of interest.

There were about 13,600 women wage-earners in commercial shipbuilding in October 1942. Women were employed on the West Coast earlier than on the East Coast, and well over half of the above 13,600 are working in shipyards on the Pacific Coast. Women are found rapidly increasing, however, on the Atlantic Coast, and some are employed in commercial shipyards on the Gulf. The term "wage-earner" does not include the clerical worker.

For wages of workers in shipyards, I suggest you see pages 302 to 303 of the August 1942 Monthly Labor Review. Average hourly earnings are given, by occupation; however, these are not by sex. We do not have any information to give you on entrance rates.

I presume you are getting information from Mrs. Herrick of the Todd Erie Basin. It should be noted that this "yard" operates mainly for ship repair; there is a real distinction between this and the shipyards which are constructing ships. Nevertheless there are many yards like Todd Erie, and many women employed in them, and you would find her information most valuable in a discussion of a shipyard employing women for the first time.

The above figures, you will note, cover only commercial shipyards. We have no comprehensive information on women employed in the Navy Yards. These are hired through Civil Service. The Mare Island Navy Yard employed women before any of the commercial shipyards did, in the San Francisco Bay area. In the Puget Sound Navy Yard there is a broad program for extensive employment of women on various jobs - and in fact a few were employed there during the last war. The Norfolk Navy Yard has been actively recruiting women since spring or early summer; the Navy Yard at Charleston is employing women, as is the Brooklyn Navy Yard.

For pictures, I suggest you get in touch with PM, and with Acme. We have some coming, we think, but they have not been received yet, and uhtil we can get duplicates made none could be sent out. We have a number of newspaper clippings which undoubtedly would be useful to you, but unfortunately they do not exist in duplicate form.

I hope this information will be helpful, and if you could come to Washington, we would turn over our clippings to you.

Sincerely yours,

Mary Anderson, Director

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Nov. 1942

U. S. DEPARTMENT OF LABOR
Bureau of Labor Statistics
Division of Construction and Public Employment

EMPLOYMENT OF WOMEN IN SHIPYARDS 1/

Summary

The manpower shortage is causing shipyards to hire and train an increasing number of women for jobs customarily held by men. In November 1942, 2.3 percent of the wage earners employed in commercial shipyards were women. Although this is a relatively small proportion as compared with some other war industries, notably aircraft, the number of women employed in shipyards more than trebled from September to November.

Less than half of the reporting commerical shipbuilding companies employed woman wage earners in November. In these yards the proportion of women varied from less than one-half of 1 percent to 12 percent of the total wage earners. The Bureau of Labor Statistics estimates that by the end of 1943 as many as 15 percent of the wage earners in shipyards will be women.

Women were most commonly employed on various types of welding. They also operated a variety of machines, and in some yards were employed as expediters, warehouse workers, and truck drivers.

Scope and Method

Each month between 200 and 300 shipbuilding and ship repair companies report the number of woman wage earners employed to the Bureau of Labor Statistics. In November 1942, at the request of the Navy Department, the Bureau of Labor Statistics made a special inquiry regarding the occupations in which women were employed in 16 of the larger shipbuilding companies, all of which employed 100 or more women in their yards. In addition to requesting information on occupations, the Bureau asked for comments on the efficiency of women and the current methods of recruiting and training them, together with suggestions for further assistance by the Federal Government in recruiting and training. Information was submitted by 13 companies.

Proportion of Women in Individual Yards

Although the tendency to employ women in production jobs in shipyards was growing, less than half of the commercial shipyards shown in table 1 reported woman wage earners in November 1942. However, these yards employed over three-fourths of all the wage earners. In over half of the yards where a start had been made toward employing woman wage earners, less than 2 percent of the total were women in November.

In the 13 yards furnishing detailed information on the occupations in which they were using women, the proportions of women ranged from 1.4 to 12.0 percent of total wage earners in November.

1/ Prepared by Eleanor V. Kennedy.

Table 1 - Commercial Shipyards Classified According to Ratio of Women to Total Wage Earners
November 1942

Ratio of women to total wage earners	Number of yards reporting	Percent of total wage earners
TOTAL	201	100.0
None	108	23.6
0.1 and under 2 percent	50	36.0
2 and under 4 percent	28	21.1
4 and under 6 percent	7	6.8
6 and under 8 percent	4	1.7
8 and under 10 percent	2	5.7
10 and under 12 percent	1	2.8
12 and under 14 percent	1	2.3

Occupations of Women

All 13 yards employed women for various types of welding. Practically all of them specifically mentioned that women were doing tack welding, and most of them reported using women for horizontal, vertical, and overhead welding. Women were employed mainly in welding hull sections fabricated off the ways, but in about half of the yards, they also worked on the ways welding plates to hull sections. Most of the yards using women on the ways reported that they worked both topside and below deck. At shipyard M on the Pacific Coast, where women held about 6 percent of the production jobs, almost two-thirds of the women were welders and over 59 percent of the yard's in-school trainees in welding were women.

Table 2 - Distribution of Woman Wage Earners at Shipyard M According to Occupations
November 1942

Occupation	Percent of total woman wage earners	Ratio of women to total wage earners
All occupations	100.0	5.8
Burners	4.6	4.9
Crane operators	0.1	0.2
Drillers	0.1	0.5
Electricians	0.6	1.1
Expediters, materials	0.7	1.7
Helpers (all crafts)	18.5	5.7
Warehousemen	3.0	12.0
Welders, productive	66.1	18.0
Welders (in-school trainees)	6.3	59.2

Table 3 - Occupations of Woman Wage Earners in 13 Selected Commercial Shipyards, November 1942

Occupation	Number of reporting yards	Shipyard												
		A	B	C	D	E	F	G	H	J	K	L	M	N
Assemblers	4	x	x	x	x									
Blacksmith helpers	3								x	x	x			
Boilermaker helpers	4								x	x	x			x
Burners	9		x		x	x		x	x	x	x		x	x
Burners' helpers	1													x
Chauffeurs	1	x												
Chippers	1													x
Crane operators	1												x	
Draftsmen	1											x		
Electricians	4				x		x1/						x	x
Electrician helpers	7					x2/		x	x	x	x	x		x
Expediters	4								x	x	x		x	
Helpers (trade not specified)	1												x	
Janitors	3		x					x				x		
Laborers	6	x						x	x	x	x			x
Layout workers	3	x	x	x										
Loftsman helpers	1													x
Machine operators														
Acetylene cutting machines	1							x						
Bending machines	2			x			x							
Buffers	3	x		x										x
Drill presses	10	x		x	x	x	x		x	x	x		x	x
Electric saws	3	x		x			x							
Engraving machines	1	x												
Grinders	8	x		x		x	x		x	x	x			x
Hand binding machines	1	x												
Hand punches	1	x												
Key machines	1													x
Lathes	5			x	x	x	x					x		
Light sheet metal	3	x				x		x						
Marking machines	2			x			x							
Milling machines	1				x									
Pipe cutters	1			x										
Screw machines	2				x	x								
Shapers	2				x		x							
Threaders	1					x								

Table 3 - Occupations of Woman Wage Earners in 13 Selected Commercial Shipyards, November 1942 (Continued)

Occupation	Number of reporting yards	Shipyard												
		A	B	C	D	E	F	G	H	J	K	L	M	N
Material clerks.....	4	x					x					x		x
Mechanic helpers.....	1						x							
Painters.....	1				x									
Painter helpers.....	2		x3/											x
Paint cleaners.....	1			x										
Photographers.....	1											x		
Pipe covers.....	2	x		x										
Pipefitter helpers.....	3		x4/					x						x
Rod distributors.....	3								x	x	x			
Sheet metal workers....	9	x		x	x		x	x	x	x	x			x
Shipfitters.....	2				x									x
Shipfitter helpers.....	7			x		x	x		x	x	x			x
Shipwright helpers.....	1													x
Silver brazers.....	1						x							
Steamfitter helpers....	3								x	x	x			
Steel checkers.....	3								x	x	x			
Tank scalers.....	3								x	x	x			
Tapers.....	1			x										
Tool checkers.....	1													x
Tracers.....	1											x		
Truck drivers.....	5	x							x	x	x			x
Warehouse workers.....	6								x	x	x	x	x	x
Welders (by type and place)														
Tack.....	9	x	x	x		x	x	x				x	x	x
Horizontal.....	10			x		x	x	x	x	x	x	x	x	x
Vertical.....	10			x		x	x	x	x	x	x	x	x	x
Overhead.....	8			x				x	x	x	x	x	x	x
Off ways.....	13	x	x	x	x	x	x	x	x	x	x	x	x	x
On ways.....	6							x	x	x	x	x	x	
Top side.....	6							x	x	x	x	x	x	
Below deck.....	4								x	x	x	x		
Not specified.....	1				x									
Welding checkers.....	3								x	x	x			

1/ Includes women employed as apprentices; winding coils for repaired motors; winding fixtures, appliances, fittings, etc.; repairing portable lights; welding whips; and assembling cable hangers.

2/ Taping and coil bending machine operators.

3/ Includes all woman workers in the paint shop.

4/ Includes helpers in the pipe shop.

All but 1 yard reported that they had women operating a variety of machines, such as drill presses, grinders, lathes, and other machines. The majority of yards had woman shipfitters and shipfitter helpers, but in 3 yards (H, J, and K) most of the latter were being used as steel checkers. It was common to use women in the electric and sheet metal shops, and a number of yards reported employing women as expediters, warehouse workers, truck drivers, and laborers. One Gulf Coast company, shipyard F, had woman apprentices in the electric shop, winding coils for repaired motors; winding fixtures, appliances, fittings, etc.; repairing portable lights; welding whips; and assembling cable hangers. Table 3 contains a complete list of occupations in which women were employed in the 13 yards.

Recruitment of Women

Woman shipyard workers were usually recruited through the United States Employment Service, company employment offices, unions and trade schools. (Table 4.) In addition to obtaining workers through the United States Employment Service, shipyard D used newspaper advertisements. Shipyard L depended on the union to furnish workers and also urged husbands to bring their wives to work at the yard.

Training Programs

The Federal Government was training women to be shipyard workers in national defense training schools sponsored by various agencies of the War Manpower Commission. Shipbuilding companies also conducted their own training courses as well as training workers on the job. Most yards reported a combination of preemployment and on-the-job training.

Shipyard D which sent its employees to training schools for pre-job training reported that woman machinists received 144 hours training (85 percent practical and 15 percent classroom) and welders received from 220 to 270 hours training (5 percent classroom). All other women were trained on the job except for approximately 1 hour per week of educational movies, safety talks, and trade theory.

In three shipyards (H, J, and K), women who were taken in as students received approximately 85 hours of training, depending upon individual aptitude. Those who were able to pass a trade test after 40 hours of burning or 60 hours of welding in the national defense training school went into the yards as burner or welder trainees. Shipfitter trainees and sheet-metal trainees were given on-the-job training by journeymen and were required to take supplementary training at the national defense schools.

Most woman employees of shipyard G came from preemployment schools. Until recently the normal training before employment comprised 60 hours. However, due to the increased demand for additional labor the training period had been reduced to 30 hours.

Table 4 - Methods Used in Recruiting Women in Selected Commercial Shipyards, November 1942

Shipyard	United States Employment Service	Company employment office	Trade schools	Union	Newspaper advertisement	Other
Shipyard A	X	X				
" B	X					
" C		X				
" D	X				X	
" E		X				
" F	X					
" G	X	X	X			
" H	X	X	X	X		
" J	X	X	X	X		
" K	X	X	X	X		
" L				X		X
" M	X			X		
" N	X			X		

The training program at shipyard M was restricted to welding. After an average of 6 days in the welding school, trainees were put on the job where their training continued until they could qualify as journeymen welders, usually after 1 month. Shipyard L's program consisted of approximately 60 hours instruction and production training in flat position welding and 36 hours additional training for vertical and overhead welding. At shipyard E trainees were given 25 hours instruction per week, 5 hours daily.

Three shipyards on the Atlantic Coast (A, B, and C) trained practically all their women on-the-job. A Pacific Coast yard, shipyard N, reported that at least 75 percent of the training was on-the-job, consisting of from 50 to 200 hours of training, depending on the type of work.

Efficiency of Women

The yards were practically unanimous in reporting that on the whole work performed by women was considered comparable with the work of men. Shipyard F, the only yard which reported that women were less satisfactory workers than men, also pointed out that women, after 3 or 4 weeks in the yards, did not work as regularly as men.

Shipyard G, which employed the largest number of woman wage earners during the midweek of November, reported that women performed satisfactorily on the job, especially where no great physical effort was entailed.

Shipyard C reported that its foremen were pleased with the work of women and found that often women were quicker to learn than the men who were now available. Machine operators and tackers were equal to men with comparable experience; welders had not been working long enough for a comparison to be made. As burners, women were inferior to men. These women kept at their jobs, however, and were anxious to learn. On the other hand, the yard pointed out that research proved that women were more susceptible to industrial poisons, such as were associated with galvanizing processes, and that productivity might be affected by this.

Shipyard D reported that although there had not been sufficient time to compare effectively the productivity of men and women, within the comparable limits of the workers' experience, the results appeared to be equal. This yard also observed that in many cases women exhibited a greater interest and were more anxious to know "why" and "how."

Shipyards H, J, and K considered the work of woman welders comparable with that of men. Because shipbuilding is a heavy industry and a heavy type of sheet metal is used, women were not very satisfactory in the sheet metal department. As drill press operators and grinders, women did commendable work, but were unable to handle heavy material without assistance. As trained shipfitter helpers they were working out very well, although the majority in this occupation were used as steel checkers.

Shipyard M reported that, as a whole, women compared favorably with men of equal experience and training. Women were satisfactory production workers at trades for which they were qualified; they were relatively less useful for work in difficult, unusual, or uncomfortable positions.

Woman welders of shipyard L were good primarily in slab and tack welding, although less productive than men. In the machine shop they were satisfactory in specialized work such as small bar turret-lathe work, small drill-press work, and filing and polishing. The electrician helpers, when trained on the job in this capacity, were equal to, and in some cases, superior to men.

Future Need for Women in Shipyards

Five shipyards (C, D, G, M, and N) estimated that they could utilize women in production work up to approximately 20 to 25 percent of their total labor force.

Three shipyards (H, J, and K) stated that the number of women they would employ depended upon (1) the number of men now employed in non-war work who could be released for war work, and (2) the consideration which the Selective Service System will give shipyard workers.

Shipyard F reported that their need would be filled with the women now employed and those now in training.

Suggestions for Further Assistance by the Federal Government

Through the United States Employment Service and national defense training schools, the Federal Government is now assisting shipyards in recruiting and training women. Three shipyards (H, J, and K) expressed the opinion that the Government could also help by making available information as to the location of potentially employable women in the area. However, they added that basic to the employment of married women, there was an immediate need for a constructive child-care program.

Shipyard G believed that the Government could most efficiently facilitate the recruitment and training of women for the shipbuilding industry by subsidizing trainees prior to actual employment in the yard.

U. S. DEPARTMENT OF LABOR
WOMEN'S BUREAU
Washington

JOBS ON WHICH WOMEN ARE EMPLOYED IN SHIPBUILDING
(Construction yards and repair yards) -- October 6, 1942)

Track welders (
Electric welders (Mainly subassembly welding and not welding on the ways
Acetylene welders(
Spot welders (

Acetylene burners (flame cutting machines)
Welding checkers
Shipfitters' helpers
Sheet-metal workers' helpers

Electricians' helpers (wire electrical fixtures, repair electrical cords and miscellaneous equipment)
Machine tool operators: drill presses, lathes and bolt cutters
Painters
Optical workers
Foundry workers

Power sewing machine operators and hand sewers (making tarpaulins, clothing bags, slip covers for furniture, mattress covers, etc. in Navy yards)

Loftsmen helpers
Pattern makers' helpers

Tool room keepers
Stockroom and warehouse attendants and clerks
Material chasers

Crane operators
Electric truck drivers and motorcycle drivers
Laborers

Shop clerical workers

MEMORANDUM

FROM: Elinore M. Herrick October 19, 1942.

TO: Mr. Joseph Haag, Jr.
Mr. F. D. Hisley

RE: Todd Erie Basin

The following memorandum was prepared as the basis for discussion with representatives of the Maritime Commission, U. S. Women's Bureau and Man Power Commission at a conference on October 16, 1942, in my office. The following were present:

Miss Mary Anderson, Chief, U. S. Women's Bureau
Miss Ethel Erickson, Field Representative, U. S. Women's Bureau
Miss Thelma McKelvey, Chief, Women's Labor Supply Service, W. P. B.
Mr. Dan Ring, U. S. Maritime Commission.

Copies are being sent to all of the above.

TODD ERIE BASIN

PREAMBLE

Every problem connected with the employment of women in shipyards seems to be a "novel" problem - for example - toilets. The following report is based upon three weeks experience with all of these novel problems and probably a million more that have not yet come to light. It must be recognized from the outset that shipyard work is so different from factory work and workplaces that the ordinary State rules for factory employment conditions do not fit. A ship repair yard differs markedly from a new construction yard. Nevertheless, it is our intention to make working conditions in our yards of either type approach the ideal as closely as is consistent with the actual conditions in the yard, the olimitations of space, the pressure of the present war emergency, etc. A ship repair yard has none of the elements of a modern assembly line plant. This fundamental difference has its impact on the problems of feeding, rest periods, clothing and - toilets.

In the beginning, we have attempted to do the most important things first and to regard the employment of our first group of 125 women as experimental - not only for the women employed in the yards, but for us and the company officials, the foremen and the men workers in the yard.

WOMEN'S FACILITIES

A new personnel building is to be constructed which will contain locker and toilet rooms /1/ for approximately 1200 women;

/1/ The facilities of the new Personnel Building plus those located in convenient places throughout the yard, it is estimated, will give us an average of one toilet to every fifteen women.

cafeteria; additional space for interviewing applicants; employment records; first aid and medical examinations. Pending completion of the above building, temporary facilities have been provided to accommodate a limited number of women workers for yard employment. It should be underst od the cafeteria and additional space for personnel offices as well as extended First Aid facilities to be afforded by the new building, will be for men and women both.

Present Temporary Facilities for Approximately 125-150 Women

A. Personnel Building

1. Locker Room with individual steel lockers, benches, mirrors
   (a) Two (2) Bradley Handbowls
   (b) Four (4) Showers
   (c) Toilet Room: three (3) toilets with steel partitions and doors, tiled part way up the walls.

2. Rest Room equipped with lounge chairs and ottomans, two couches, sisal rug, coffee tables, smoking equipment, lamps and mirror.

3. Lunch Room. When the kitchen stove arrives, we will be able to serve a blue plate luncheon, coffee, milk, ice cream and fruits. Seating capacity sixty-six (66) at one time. This will be used on a four-sitting plan and will serve all women employees --yard and office -- until the new cafeteria is in operation. It will be run by a concessionaire who, we hope, will later, handle the large cafeteria and all feeding in the yard. We will control price, size of portions and quality of food, and the contract will limit profits and provide for an independent audit of books.

B. Yard Facilities

1. Present Facilities

   Three toilets in Training School
   Ten toilets in building "J"
   Two toilets in conference and laboratory building
   Two toilets in industrial building

   Seventeen (17) TOTAL

2. Inadequacy of present facilities

Since the women will sometimes be working out of doors and sometimes the same women will be working indoors, the "inadequacies" are not so serious as they would be if it were a factory type of operation. Since most of the women will not have fixed stations for work either daily or weekly, it has seemed best to us to develop more than adequate facilities in the new personnel building and allow the women sufficient time to get to it. However, although the present 17 toilets are located so that they are moderately convenient to all the anticipated work areas for the women, we realize the situation is not ideal.

Specific inadequacies are:

(a) We must have toilet facilities in the machine shop as this shop at least approximates factory work conditions. Under State law, women should have toilets inside their work place. Until plans for increasing the size of the machine shop are completed, we may not be able to put in additional toilets in this shop, but will do so as soon as possible.

(b) Facilities need to be located nearer some of the work places such as tin and copper shops and mold loft. (Working on this.)

C. Office Workers

1. Personnel Building (present)

(a) 2 toilets in separate rooms, insufficient in number.
1 small rest room, no couch but deck chairs.
2 handbowls in each toilet room.

(b) cloth roller rowles, automatic - should be paper or have more cloth towels.
(Working on above items.)

2. Office Building
6 toilets, adequate for 83 persons now employed, but rest room and toilet facilities should really be improved. (Working on this.)

D. Cleaning of Rest Rooms and Toilets

Charwomen now hired by Outside Yard Construction Foreman. Should be some informal liaison between latter and Head Matron, who is responsible to Women's Personnel Officer as special problems of cleanliness may arise.

SAFETY EQUIPMENT

We are trying to make use of all that the management has learned about the hazards and various occupational disabilities that occur in shipyard work, but realize that women present special problems in this regard. We are using for the women the same things that have proved safe for men, making such necessary changes as will make the equipment usable for women. Already we have decided upon changes in our first set of equipment, i.e. bule denim is not good for welders uniforms, though no one knew that before. Also, we have changed from the bib-type overall to a coverall.

TENTATIVE PLAN FOR SUPPLYING SAFETY EQUIPMENT AND STANDARD SAFETY CLOTHING

A. Supplied by Company		Price	Deposit Refundable
Helmet		$ 2.94	$ 1.50
Goggles	(Approx.)	1.50	1.00
Welder's Shield		5.20	
Respirator		3.75	
	Total	$12.39	

B. Special Welder's and Burner's Equipment

The training period is only four (4) hours a day, five (5) days a week. The maximum earnings for this period, therefore, are $16.40. It has been decided that the company will supply the welder's equipment to trainees without cost, each woman to sign a receipt for same, and at the end of the training period when she goes into the full production schedule she will be required to purchase her equipment on a weekly installment basis of four (4) payments at the rate of $4.62 per week. This sum will be deducted from her pay of $37.60 for a 48 hour week.

Equipment *	Price
Leather jacket	$ 7.80
Leather dungarees	7.50
Mitts	1.17
Spats	2.00
TOTAL	$ 18.47

* This is all specially treated and fire resistant.

C. Standard Safety Clothing

Shoes - $3.99. To be purchased by employees at cost from Company store room.

Our first selection of uniforms was a failure, they were too inflammable. We are now sending the girls to the Army-Navy stores near by to buy woolen khaki pants and blouses which cost about $1.00 for pants and 50¢ for shirts. We must also decide how to handle equipment purchased and turned back inrelatively good condition by persons who quit.

Miscellaneous

Wool socks and hand creams will be sold at cost in the stores. The women can send their clothes to the commercial laundry which now services the men and for which they pay.

On safety goggles, the company secures lenses ground to the individual's prescription upon request, and sells them at the minimum cost.

NOTE: What are the job hazards?

We know it is necessary to use a respirator when working on galvanized metal or on surfaces painted with red lead. We will take frequent blood counts to check on lead poisoning. We shall also watch for signs of zinc poisoning. Aside from accidents what other hazards or occupational diseases should we be on guard against? We are securing data on these problems from various Government and private sources.

MEDICAL PROGRAM

We have a woman physician and registered nurses to handle the pre-employment physical examinations. Vision is tested by an eye specialist now employed for men. The nurses help also in the First Aid which is used jointly by men and women. We are giving an examination that is as complete as that for the WAACS and WAVES and in some respects more thorough, for example, an X-ray of the lungs. The items being covered are as follows:

Height	Chest X-ray
Weight	Obstetrical history with pelvic examination where needed
Surgical and medical histories	
Eyes	
Teeth	Appendix
Tonsils	Venereal diseases
Inner ear for balance at heights	Hemoglobin
Hearing where indicated	Red blood count
Epilepsy	Varicose veins
Breasts	Arches
Heart	Feet
Blood pressure	Urinalysis - over 40 group
Spinal curvatures	

From the outset complete medical records will be kept with periodic check-ups. We should be able ultimately to submit a medical record which will be valuable in industrial hygiene, showing the effects of fatigue, how to counteract it, the effects of particular jobs on health. The purpose of such records and physical examinations is to enable us to shift women to other work at the first sign of harmful occupational effects. This system will, of course, reduce our compensation insurance risks as well as aiding production and lowering the cost of training which might otherwise be wasted.

EMPLOYMENT POLICY AND STAFF AT THE YARD

Selection of the right type of woman for the particular job is only the first step. She must be followed up during the training period and on the job to ensure-th

a) Maximum production
b) Good morale in the yard
c) Maintaining good physical condition to lessen absenteeism

In selecting the staff, from the chief woman personnel officer down to the rest room matron, we have visualized an integrated program. For example, the field representative will check our selection by following the employee's production record through the training period and at regular intervals therafter with the shop foremen.

The entire personnel staff is well aware that theirs is a service job; that selection is from the standpoint of employing women who have the qualifications and meet the standards which have been worked out with the yard management; that service also embraces the responsiblilityfor the welfare of the individual, not alone from the individual's standpoint but also because physically well women, happily adjusted to their jobs, mean a stable labor force.

Labor Supply

We have so many thousands of written applications now on file that selection is being made from these applicants who are then called in for interview. When the best of these have been culled the resources of the USES will be used.

All applications are being acknowledged and delay in calling in for interview explained. In 6 weeks or 2 months, those who have not been called in will receive a second letter to keep their interest alive and maintain good will toward the Todd organization.

Eligibility

* 1. United States citizenship with documentary proof.
2. Age span - 21 to 45.
3. No women with dependents or children under 14 living at home, who otherwise would be uncared for.
4. If presently employed in a war production plant, applicant must submit release from present employer.
5. High school education required, with specialized training or experience desirable.
6. A woman must not be more than 25% overweight in relation to her height.
7. All applicants should live within reasonable transportation distance from the plant.

* The status of so-called "friendly aliens" is to be clarified with the proper Government agencies.

"Fair Employment Practices" Policy

Our first group hired contained a ratio of 10 percent colored to white, and it is our intention to maintain that ratio as a minimum. Other minority groups are being handled in the same manner. There is no segregation of colored from white, either at work or in rest and toilet rooms.

Induction Procedure Covers:

1. Introductory explanation of job opportunities and disagreeable features by Personnel Director.
* 2. Securing proof of citizenship.
3. Interview to rate ability and quality of applicant and determine job placement.
4. Physcial examination.
5. Pre-employment record completed, photograph and temporary badge issued.
6. Applicant then sent to Coast Guard Office for pass and fingerprinting.
7. Applicant returns to Personnel Office where all employment data are collected and final card issued.
8. Receives copy of Union contract and Retirement Plan.
9. Receives Safety Equipment and Explanation of Use.
10. Group taken on tour of yard, giving them chance to change their minds. Introduced to foreman in shop where she is to work or to foreman of training school. Safety Engineers to accompany group and point out chances for accidents.
11. Attends special lecture in Rest Room on Safety.

Training School

This program is under the general supervision of H. L. Seward, Professor of Marine Engineering at Yale. There is a separate building for training classes on Welder, Burner, Shipfitting, Sheet Metal work and electrical jobs. Machine shop operations and some electrical operations, as well as certain training in other shops, is done on the job with teachers under the immediate direction of the foreman.

The training program also emphasizes safety on the job; uses motion pictures; handbooks prepared for shipyard practice; special lectures.

In addition, the women employees are receiving special safety instruction in the rest room from a member of the Safety Department on how to walk properly, stand properly, and lift weights to reduce fatigue and eliminate strain. These lectures are given once a week through the training period of 4 - 8 weeks. Thereafter, the women will be brought together once a month for a safety class. We are also studying how the rest period can be utilized for exercises to reduce fatigue in specific jobs, and how to make the transition from the customary light-weight high-heeled shoe to the heavy-weight, metal-capped, low-heeled shoe used in the yard less difficult.

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Wage Policy

Women will receive the same wages as men for same work performed. The starting rate or minimum is 82¢ an hour. Advancement will be made on the same schedule contained in the union contract. Similarly, a woman claiming a skill will be given a test and if passed she will immediately go to the higher rate commensurate with her skill. For example, one woman was put on after a test at the rate of $1.09 an hour as provided in the union contract.

Hours.

We are at present employing the women for 48 hours a week, 8 hours daily for 6 days. However, the men work 10 hours a day and in some jobs it will be necessary for men and women to work the same hours. We could employ women for 5 days of 10 hours each, a maximum of 50 hours a week, or arrange a swing shift for the women and keep them on an 8 hour day. I believe a ten hour day undesirable from the standpoint of health and efficiency for either men or women. For the present, we do not plan to use women on the night shift and in no event should they be used on a "graveyard" shift. Interestingly, we have had a number of women who refused to be interviewed for day shift work as they preferred the night shirt, presumably to take care of their household duties.

Lunch Period — One hour.

Rest Periods

One during morning and another during afternoon -- ten minutes in rest room plus "traveling time".

Immediate Available Jobs for Women are:

Shipfitting:	Laying out small templates Replacement of bulkheads on platforms Laying out on plate shop
Tin Shop:	Spot welding Storeroom Cutters Helping to lay out work on bench Pittsburgh machine Clerical work
Copper Shop:	Helper Sweeper
Welding:	Group A - a four (4) week course qualifying as Tack Welders Group B - an eight (8) week course graduating as Probationery Improvers.
Burners:	A four (4) week course, finishing as Helpers.

Machine Shop: Small turret lathes
Bolt Machine
Small drill press

Electrical Shop: Winding coils and armatures

NOTE: List of jobs to be supplemented. Ask Mary Anderson's advice and where they are being used on West Coast.

NUMBER WOMEN HIRED * OCTOBER 5th to 10th

Our careful selection of applicants to be called in for interview has resulted in our hiring 76 percent of those interviewed. 10 percent of those hired resigned within the first week. It would be helpful if Coast Guard regulations permitted our taking them out on the job to look at it before they were hired. Of those who are now completing their second week there have been no resignations to date.

Specified Job Placements

Shipfitters	18
Ironworkers	3
Welders	17
Burners	6
Coppershop	3
Electrical Shop	6
Machine Shop	9
Tinshop (Helpers)	2
	64 TOTAL

KAISER COMPANY, INC.
Portland, Oregon
September 16, 1942

Miss Mary Anderson, Director
U. S. Department of Labor
Women's Bureau
Washington

Dear Miss Anderson:

Your letter of August 31, 1942, to Mr. Henry J. Kaiser has been referred to me.

The newspaper article to which you referred was substantially correct with regards to the percentage of jobs that can be done by women. We feel that they are particularly adaptable to the following; welding, tacking, warehouse work, general labor, and electrical shop helpers.

Careful selection and follow-up on the job is important, and we have a program outlined which brings each woman on the job with an interview at which time our safety program is explained as well as rules of conduct on the job. We have found that a careful selection of women workers is very important, and a careful follow-up and interview on the job is necessary inasmuch as most of them are being put in with working class of men that is a new experience to them.

We have some photographs available and will send some to you as soon as prints can be made.

If you have any questions to ask on any particular phase of our program, please feel free to write us again.

Yours very truly,
KAISER COMPANY, INC.
Portland Yard

J. C. Murray
Personnel Manager

PORTLAND YARD

TRAINING FOR SHIPYARDS

The last report (January 15) from Vocational Training, Federal Security Agency, indicates the extent of training of women in pre-employment courses in shipbuilding occupations.

Pre-employment Courses

Occupations	Number of Women Trainees July 1- Nov. 30.)
Shiploft	127
Shipfitting	1512
Shipcarpentry and wood working	399
Ship Sheet Metal	2955
Ship Plumbing and Pipe Fitting	419
Ship electrician	2215
Ship machine shop	1781
Outside or Marine Machinists	46
Ship welding, electric (Heavy)	7248
Ship welding electric (Light)	97
Ship welding gas (Heavy)	396
Ship welding gas (Light)	135
Ship cutting gas and arc	357
Shipbuilding auxiliary instruction	270
Shipbuilding blue print reading	78
Shipbuilding, other	313

The total cumulative enrollment in shipbuilding occupations during these months was 109,601 of which 16.7 percent were women. However, enrollment on November 30th in these classes showed 5,575 women against a total of 23,246, or 24 percent women. Enrollment in supplementary shipbuilding courses on November 30th was 2,311 women against a total of 34,778, or 6.6 percent women.

(COPY)

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PORTLAND YARD

WOMEN'S BUREAU
U.S. Department of Labor
Washington, D. C.

Shipyards Will Need 150,000 Women for Jobs, Official Says

WPB Committee Chairman Asserts Wages Will Be On Par With Men's Pay

By JOSEPH LOFTUS,
Associated Press Staff Writer.

TORONTO, Sept. 29.—Shipyards of the United States will need at least 150,000 women workers in the coming year, Paul R. Porter, chairman of the Shipbuilding Stabilization Committee, told the convention of the American Federation of Labor Metal Trades Department today.

They will be paid on the principle of "equal pay for equal work," quality and quantity of work considered, he said, which means that their weekly take-home earnings will average between $45 and $60 and will reach $70 in some cases.

He estimated that 2,000 to 3,000 women now were working "quite successfully" in the Kaiser yards on the Pacific Coast and in the Todd and Federal yards on the East Coast, mostly at welding and light machine work.

Kearny Jobs Planned.

The Federal Shipbuilding Corp. at Kearny, N. J., Mr. Porter said, planned to put on about 1,000 women in the next three months, mostly as welders.

Mr. Porter's committee is a unit of the Labor Production Division of the War Production Board. Under its auspices wages have been negotiated on an industry-wide basis.

Mr. Porter said the average weekly earnings in shipbuilding as of last July were $56.55, a figure surpassed in only one other manufacturing industry in the United States, engines and turbines.

Two years earlier shipbuilding had placed seventh in earnings. The 1942 figures, however, include overtime and night preminums, which were negligible two years ago.

Mr. Porter said turnover was a serious problem in shipyard employment, but he reported the strike record was better than in the World War.

"Notwithstanding the much greater present employment in shipbuilding," he said, "the number of strikes, as reported by the Bureau of Labor Statistics, has in this war been just 45 in 1941 and 17 in 1942 (through August), as against 106 in 1917 and 140 in 1918.

24,000 Man-Days Lost.

"Man-days lost through strikes in the first eight months of 1942 have been 24,000, or the equivalent of an average loss per shipbuilding employe of less than half a minute a week."

The older strike statistics do not show the number of men involved or man-days lost.

John P. Frey, president of the Metal Trades Department told, delegates representing about 1,600,000 members that about 320,000 shipyard workers would have to be found in the next three or four months—120,000 for new jobs and 200,000 to replace those going into the armed forces.

U. S. DEPARTMENT OF LABOR
WOMEN'S BUREAU
Washington

JOBS ON WHICH WOMEN ARE EMPLOYED IN SHIPBUILDING
(Construction yards and repair yards) -- October 6, 1942)

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Optical workers
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Power sewing machine operators and hand sewers (making tarpaulins, clothing bags, slip covers for furniture, mattress covers, etc. in Navy yards)

Loftsmen helpers
Pattern makers' helpers

Tool room keepers
Stockroom and warehouse attendants and clerks
Material chasers

Crane operators
Electric truck drivers and motorcycle drivers
Laborers

Shop clerical workers

ADDITIONAL JOBS SUGGESTED FOR WOMEN IN SHIPBUILDING

Plate shop: buffing and polishing

Paint shop: brush painting, spray painting, staining, puttying, removing paint, etc.

Rivet heaters
Rivet passers

Electrical shop: armature and coil winding; wiring; repairing and assembling switchboards; soldering, insulating field coils and transformers.

Machine shop: lathes, milling machines, grinding machines, drill presses, shapers, profilers, broaches, automatic screw machines, gear cutters, thread millers and nibblers.

Tool room: machine tool operations on reamers, cutters, end mills, fixtures, gages, etc., operating drills, millers, grinders, shapers, lathes, planers and slotters.

Tool grinding

Bench work of filing, burring, lapping, etc.

Sheet metal shops: spot welding, soldering, riveting, drilling, operating shears, brakes and punch presses; and light assembly operations on metal lockers, boxes, shelves, etc.

Pipe and copper shop: helpers to coppersmiths and pipefitters on light work

Power hacksaw operator
Pipe bending and threading
Drill press operator
Solderer

Boiler shop: Operating drill presses, shears, and punch presses, and doing light riveting.

Boat and joiner shop: Woodworking machines (planers, routers, shapers, lathes
Band saws and drum sanders
Nailing and gluing wooden parts
Caulking small boats

Draftsmen and Tracers

Please return to

570

WOMEN'S BUREAU
U.S. Department of Labor
Washington, D. C.

Confidential

TODD ERIE BASIN (N.Y.)

Oct. 1942

by Mrs. Elinore Herrick

PREAMBLE

Every problem connected with the employment of women in shipyards seems to be a "novel" problem - for example - toilets. The following report is based upon three weeks experience with all of these novel problems and a million more that have not yet come to light. It must be recognized from the outset that shipyard work is so different from factory work and workplaces that the ordinary State rules for factory employment conditions do not fit. In fact the New York legislature recognized this problem in exempting shipyards. A ship repair yard differs markedly from a new construction yard. Nevertheless it is our intention to make working conditions in our yards of either type approach the ideal as closely as is consistent with the actual conditions in the yard, the limitations of space, the pressure of the present war emergency, etc. A ship repair yard has none of the elements of a modern assembly line plant. This fundamental difference has its impact on the problems of feeding, rest periods, clothing and - not excepting toilets.

In the beginning we have attempted to do the most important things first and to regard the employment of our first group of 125 women as experimental - not only for the women employed in the yards but for us and the company officials, the foremen and the men workers in the yard.

WOMEN'S FACILITIES

A new personnel building is to be constructed which will contain locker and toilet rooms for approximately 1500 women; cafeteria; additional space for interviewing; records; first aid and medical examinations. Pending completion of the above building, temporary facilities have been provided to accomodate a limited number of women workers for yard employment.

Temporary Facilities for Approximately 125-150 Women

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   (a) Two (2) Bradley Handbowls
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(a) Some toilet rooms need a screen outside the entrance door.

(b) We must have toilet facilities in the machine shop as this shop at least approximates factory work conditions. The men have to go outside the building now to a sort of lean-to. Under state law women should have toilets inside their work place.

(c) Facilities need to be located nearer some of the work places, such as tin and copper shops and mold loft. (Working on this.)

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Respirator		3.75	

B. Special Welder's and Burner's Equipment

The training period is only four hours a day, five days a

week. The maximum earnings for this period, therefore, are $16.40. It has been decided that the company will supply the welder's equipment to trainees without cost, each woman to sign a receipt for same, and at the end of the training period when she goes into the full production schedule she will be required to purchase her equipment on a weekly instalment basis of three (3) payments at the rate of $6.16 per week. This sum will be deducted from her pay of $37.60 for a 48 hour week.

Equipment *	Price
Leather jacket	$7.80
Leather dungarees	7.50
Mits	1.17
Spats	2.00
TOTAL	$18.47

* This is all specially treated and fire resistant.

C. Standard Safety Clothing to be Purchased by Employee (4 weekly instalments)

Shoes	$3.99
Bib overall (2 pr)	2.26
Bandanna (2)	.24
Sweat shirt (2)	1.60
TOTAL	$8.09 (weekly instalment $2.02)

There is a policy question involved in requiring the women to buy the above (Group C) safety clothing. Since we require them to wear it, whereas the men may wear what they happen to have, we ought perhaps to consider supplying the first outfit without charge and requiring them to buy only the replacements, except for shoes which the men must buy for themselves. This policy would involve an outlay of $4100. for one thousand (1000) women.

Summary

If the women are to buy all the items except those in Group A, their total purchase will amount fo $26.56 or $6.64 deducted for four

successive weeks, or $8.86 deducted for three successive weeks, which may cause an unfavorable reaction or it may make them value the job more. At the moment it is anybody's guess.

Miscellaneous

Wool socks and handcreams will be sold at cost in the stores. The women can send their clothes to the commercial laundry which now services the men and for which they pay.

On safety goggles, the company provides lenses ground to the individual's prescription upon request.

NOTE: What are the job hazards? Ask Mary Anderson.

We know the use of a respirator on galvanized metal or that when painted with red lead is necessary and will take frequent blood counts tocheck on lead poisoning. Aside from accidents what other hazards or occupational diseases should we be on guard against?

MEDICAL PROGRAM

We have a woman physician and registered nurses to handle the pre-employment physical examinations. Vision will be tested by eye specialist now employed for men. The nurses help also in the First Aid which is used jointly by men and women. We are giving an examination that is as complete as that for the WAACS and WAVES and in some respects more thorough, for example: an X-ray of the lungs. The items being covered are as follows:

Height
Weight
Eyes
Teeth
Tonsils
Hearing where indicated
Breasts
Heart
Blood pressure
Spinal curvatures
Chest X-ray
Surgicial history
Obstetrical history with pelvic examination where needed
Appendix
Venereal disease
Hemoglobin
Red blood count
Varicose veins
Arches
Feet
Urinalysis - over 40 group

From the outset complete medical records will be kept with periodic checkups. We should be able ultimately to submit a medical record which will be valuable in industrial hygiene, showing the effects of fatigue, how to counteract it, the effects of particular jobs on health. The purpose of such records and physical examinations is to enable us to shift women to other work at the first sign of harmful occupational effects. This system will, of course, reduce our compensation insurance risks as well as aiding production and lowering the cost of training which might otherwise be wasted.

EMPLOYMENT POLICY AND STAFF AT THE YARD

Selection of the right type of woman for the particular job is only the first step. She must be followed up during the training period and on the job to ensure -

a) Maximum production

b) Good morale in the yard

c) Maintaining good physical condition to lessen absenteeism

In selecting the staff, from the chief woman personnel officer down to the rest room matron, we have visualized an integrated program. For example, the field representative will check our selection by following the employee's production record through the training period and at regular intervals thereafter with the shop foreman.

The entire personnel staff is well aware that theirs is a service job; that selection is from the standpoint of employing women who have the qualifications and meet the standards which have been worked out with the yard management; that service also embraces the responsibility for the welfare of the individual, not alone from the individual's standpoint but also because physically well women, happily adjusted to their jobs mean a stable labor force.

Labor Supply

We have so many thousand written applications now on file

that selection is being made from these applicants who are then called in for interview. When the best of these have been culled the resources of the USES will be used.

Eligibility

1. United States citizenship with documentary proof.
2. Age span - 21 to 45.
3. No women with dependents or children under 14 living at home.
4. If presently employed in a war production plant applicant must submit release from present employer.
5. High school education required, with specialized training or experience desirable.
6. A woman must not be more than 25% overweight in relation to her height.
7. All applicants should live within reasonable transportation distance from the plant.

"Fair Employment Practices" Policy

Our first group hired contained a ratio of 10 per cent colored to white, and it is our intention to maintain that ratio as a minimum. Other minority groups are being handled in the same manner. There is no segregation of colored from white, either at work or in rest and toilet rooms.

Induction Procedure Covers:

1. Introductory explanation of job opportunities and disagreeable features by Personnel Director.
2. Securing proof of citizenship.
3. Interview to rate ability and quality of applicant and determine job placement.
4. Physical examination.
5. Pre-employment record completed, photograph and temporary badge issued.

6. Applicant then sent to Coast Guard Office for pass and fingerprinting.
7. Applicant returns to Personnel Office where all employment data is collected and final card issued.
8. Receives copy of Union contract.
9. Receives Safety Equipment and Explanation of Use.
10. Introduced to foreman in shop where she is to work or to foreman of training school.
11. Attends special lecture on safety.

Training School

Program under general supervision of Professor Marine Engineering at Yale, H. L. Seward. Separate building for training classes on Welder, Burner, Shipfitting, Tinsmith, Electrical jobs. Machine shop operations and some electrical operations, as well as certain training in other shops is done on the job with teachers under the immediate direction of the foreman.

The training program also emphasizes safety on the job; uses motion pictures; handbooks prepared for shipyard practice; special lectures.

In addition the women employees are receiving special safety instruction in the rest room from a member of the Safety Department on how to walk properly, stand properly, and lift weights to reduce fatigue and eliminate strain. These lectures are given once a week through the training period of 4 - 8 weeks. Thereafter the women will be brought together once a month for a safety class. We are also studying how the rest period can be utilized for exercises to reduce fatigue in specific jobs.

Wage Policy

Women will receive the same wages a men for same work performed. The starting rate or minimum is 82¢ an hour. Advancement will be made

on the same schedule contained in the union contract. Similarly, as provided for in the contract, a woman claiming a skill will be given a test and if passed she will immediately go to the higher rate. For example one woman was put on after a test at the Probationary Improver mechanic's rate of $1. an hour.

Hours

We are at present employing the women for 48 hours a week, 8 hours daily for 6 days. However the men work 10 hours a day and in some jobs it will be necessary for men and women to work the same hours. So we must consider the possibility of arranging for more shifts for the men or a swing shift for the women. I believe a ten hour day undesirable from standpoint of health and efficiency for either men or women. For the present we do not plan to use women on the night shift and in no event should they be used on a "graveyard" shift. Interestingly we have had a number of women who refused to be interviewed for day shift work as they preferred the night shift.

Lunch Period

One hour.

Rest Periods

One during morning and another during afternoon -- 10 minutes in rest room plus "traveling time."

Immediate Available Jobs for Women are:

Shipfitting:	Laying out small templates Replacement of bulkheads on platforms Laying out on plate shop
Tin Shop:	Spot welding Storeroom Cutters Helping to lay out work on bench Pittsburgh machine Clerical work
Copper Shop:	Helper Sweeper

Welding: Group A - a four (4) week course qualifying as tack welders

" B - 8 week course graduating as Probationery Improvers

Burners: 4 week course, finishing as helpers

Machine Shop: Small turret lathes
Bolt machine
Small drill press

Electrical Shop
Winding coils and armatures

NOTE: List of jobs to be supplemented. Ask Mary Anderson's advice and where they are being used in West Coast.

NUMBER WOMEN HIRED - OCTOBER 5th to 10th

Our careful selection of applicants to be called in for interview has resulted in our hiring 76% of those interviewed. 10% of those hired have resigned within the first week. It would be helpful if Coast Guard regulations permitted our taking them out on the job to look at it before they were hired. Of those who are now completing their second week there have been no resignations to date.

Specified Job Placements

Shipfitters	18	
Ironworkers	3	
Welders	17	
Burners	6	
Coppershop	3	
Electrical Shop	6	
Machine Shop	9	
Tinshop (Helpers)	2	TOTAL 64

Examiner
San Francisco, Calif.
Dec. 30, 1942.

ON THE FIGHTING FRONTS AT HOME
by Jean Nowell

While her brother serves as a private with the Army Medical Corps, Nell Loscutoff, 19, sands down desks, flag lockers and life preserver racks for Liberty ships at Mangrum. Holbrook & Ellis' plant No. 2 at 20 Eleventh St.

A finisher's helper now, she was an elevator operator before the war. Working with her are Verta Frank, 21, finisher, and Edith Storm, 18, finisher's helper.

Miss Frank formerly worked as an egg breaker, the eggs being dried for use in powdered form by the Army and Navy. A brother, Corp. Beverly Pool, is in North Africa.

Miss Storm held jobs in a laundry and an envelope manufacturing concern before turning to war work.

* * *

In the plate shop at Richmond Shipyard No. 3, they call her "Tiny" but her name is Betty M. Cook. Betty is 19, just under 5 feet, and with heavy safety shoes, hard hat and her hands full of equipment she weighs just ninety pounds plus.

She's an expert operator of a type of burning machine used for cutting circles and long sweeping curves in thich sheets of steel. Her work is so exact that she is moved throughout the plate shop, wherever there are intricate lines to be burned.

ONLY COPY

WAR MANPOWER COMMISSION

Division of Operations -- Women's Program

EMPLOYMENT OF WOMEN IN SHIPYARDS

Part 1. An Outline of the Steps Taken to Employ Women as Submitted by a Major Shipbuilding Company in this Country.

The following report is the approach to the employment of women by a major shipbuilding company which has been worked out and is now in operation. The name of the company is withheld, but it is thought that the outline can be of considerable assistance to Regional Manpower Directors and Area Manpower Directors where the shipbuilding industry is located.

The extent to which women can be used or will be used in the shipbuilding industry has not yet been determined, but where labor shortages are apparent or impending, the initial approach to the employment of women in shipyards must be taken by management and with the assistance of the Area and Regional Manpower Directors.

The following is quoted almost in its entirety as submitted by the particular shipbuilding company after conference with representatives of the Maritime Commission, War Manpower Commission, and Women's Bureau of the U. S. Department of Labor.

* * * *

PREAMBLE

Every problem connected with the employment of women in shipyards seems to be a "novel" problem - for example - toilets. The following report is based upon a brief and limited experience with all of these novel problems and probably a million more that have not yet come to light. It must be recognized from the outset that shipyard work is so different from factory work and workplaces that the ordinary State rules for factory employment conditions do not fit. A ship repair yard differs markedly from a new construction yard. Nevertheless, it is the intention to make working conditions in the yards of either type approach the ideal as closely as is consistent with the actual conditions in the yard, the limitations of space, the pressure of the present war emergency, etc. A ship repair yard has none of the elements of a modern assembly line plant. This fundamental difference has its impact on the problems of feeding, rest periods, clothing and - toilets.

In the beginning, this company attempted to do the most important things first and to regard the employment of the first group of 125 women as experimental - not only for the women employed in the yards, but for the company officials, the foremen and the men workers in the yard.

WOMEN'S FACILITIES

A new personnel building is to be constructed which will contain locker and toilet rooms* for approximately 1200 women; cafeteria; additional space for interviewing applicants; employment records; first aid and medical examinations. Pending completion of the above building, temporary facilities have been provided to accomodate a limited number of women workers for yard employment. It should be understood the cafeteria and additional space for Personnel offices as well as extended First Aid facilities to be afforded by the new building will be for men and women both.

Present Temporary Facilities for Approximately 125-150 Women

A. Personnel Building

1. Locker Room with individual lockers, benches, mirrors
   (a) Two (2) Bradley Handbowls
   (b) Four (4) Showers
   (c) Toilet Room: three (3) toilets with partitions and doors, tiled part way up the walls.

**2. Rest Room equipped with lounge chairs and ottomans, two couches, sisal rug, coffee tables, smoking equipment, lamps and mirror.

3. Lunch Room. When the kitchen stove arrives, the company will be able to serve a blue plate luncheon, coffee, milk, ice cream and fruits. Seating capacity sixty-six (66) at one time. This will be used on a four-sitting plan and will serve all women employees -- yard and office -- until the new cafeteria is in operation. It will be run by a concessionaire who will later handle the large cafeteria and all feeding in the yard. The Company will control price, size of portions and quality of food, and the contract will limit profits and provide for an independent audit of books.

B. Yard Facilities

1. Present Facilities
   Three toilets in Training School
   Ten toilets in building "J"
   Two toilets in conference and laboratory building
   Two toilets in industrial building
   Seventeen (17) TOTAL

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* The facilities of the New Personnel Building, plus those located in convenient places throughout the yard, it is estimated will give an average of one toilet to every fifteen women.

** It is recognized that elaborate facilities are not essential, particularly in view of increasing difficulty to secure furniture. The emphasis is for sufficient facilities for rest room toilets, and lunch services.

2. Inadequacy of present facilities

Since the women will sometimes be working out of doors and sometimes the same women will be working indoors, the "inadequacies" are not so serious as they would be if it were a factory type of operation. Since most of the women will not have fixed stations for work either daily or weekly, it has seemed best to develop more than adequate facilities in the new personnel building and allow the women sufficient time to get to it. However, although the present 17 toilets are located so that they are moderately convenient to all the anticipated work areas for the women, it is realized that the situation is not ideal.

Specific inadequacies are:

(a) There must be toilet facilities in the machine shop as this shop at least approximates factory work conditions. Under State law, women should have toilets inside their work place. Until plans for increasing the size of the machine shop are completed, it may not be possible to put in additional toilets in this shop, but it will be done as soon as possible.

*(b) Facilities need to be located nearer some of the work places such as tin and copper shops and mold loft.

C. Office Workers

* 1. Personnel Building (present)

(a) 2 toilets in separate rooms, insufficient in number.
1 small rest room no couch but deck chairs.
2 handbowls in each toilet room.
(b) cloth roller towels, automatic - should be paper or have more cloth towels.

* 2. Office Building

6 toilets, adequate for 83 persons now employed, but rest room and toilet facilities should really be improved.

D. Cleaning of Rest Rooms and Toilets

Charwomen now hired by Outside Yard Construction Foreman. Should be some informal liaison between latter and Head Matron, who is responsible to Women's Personnel Officer as special problems of cleanliness may arise.

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* These matters receiving continuous planning for improvement.

SAFETY EQUIPMENT

Every attempt is being made to use all that the management has learned about the hazards and various occupational disabilities that occur in shipyard work, but it is realized that women present special problems in this regard. The same things are being used for women that have proved safe for men, making such necessary changes as will make the equipment usable for women. Already changes have been necessary in the first set of equipment, i.e., blue denim is not good for welders' uniforms, though no one knew that before. Also, there was a change from the bib-type overall to a coverall.

TENTATIVE PLAN FOR SUPPLYING SAFETY EQUIPMENT AND STANDARD SAFETY CLOTHING

A. Supplied by Company

	Price	Deposit Refundable
Helmet	$ 2.94	$ 1.50
Goggles (Approx)	1.50	1.00
Welder's Shield	5.20	
Respirator	3.75	
Total	$12.39	

B. Special Welder's and Burner's Equipment

The training period is only four (4) hours a day, five (5) days a week. The maximum earnings for this period, therefore, are $16.40. It has been decided that the company will supply the welder's equipment to trainees without cost, each woman to sign a receipt for same, and at the end of the training period when she goes into the full production schedule she will be required to purchase her equipment on a weekly instalment basis of four (4) payments at the rate of $4.62 per week. This sum willbbe deducted from her pay of $37.60 for a 48-hour week.

Equipment *	Price
Leather jacket	$ 7.80
Leather dungarees	7.50
Mitts	1.17
Spats	2.00
TOTAL	$18.47

* This is all specially treated and fire resistant.

C. Standard Safety Clothing

Shoes - $3.99. To be purchased by employees at cost from Company store room.

The first selection of uniforms was a failure; they were too inflammable. The girls are being sent to the Army-Navy stores near by to buy woolen khaki pants and blouses which cost about $1.00 for pants and 50¢ for shirts. Arrangements also must be made as to how to handle equipment purchased and turned back in relatively good condition by persons who quit.

Miscellaneous

Wool socks and hand creams will be sold at cost in the stores. The women can send their clothes to the commercial laundry which now services the men and for which they pay.

On safety goggles, the company secures lenses ground to the individual's prescription upon request, and sells them at the minimum cost.

NOTE: What are the job hazards?

The company knows it is necessary to use a respirator when working on galvanized metal or on surfaces painted with red lead. Frequent blood counts will be taken to check on lead poisoning. Signs of zinc poisoning will be watched for. Aside from accidents what other hazards or occupational diseases should the company be on guard against? Data on these problems is being secured from various Government and private sources.

MEDICAL PROBLEM

A woman physician has been employed and registered nurses to handle the pre-employment physical examinations. Vision is tested by an eye specialist now employed for men. The nurses help also in the First Aid which is used jointly by men and women. An examination is being given that is as complete as that for the WAACS and WAVES and in some respects more thorough, for example, an X-Ray of the lungs. The items being covered are as follows:

Height
Weight
Surgical and medical histories
Eyes
Teeth
Tonsils
Inner ear for balance at heights
Hearing where indicated
Epilepsy
Breasts
Heart
Blood pressure
Spinal curvatures
Chest X-ray
Obstetrical history with pelvic examination where needed
Appendix
Venereal diseases
Hemoglobin
Red blood count
Varicose veins
Arches
Feet
Urinalysis - over 40 group

From the outset complete medical records will be kept with periodic check-ups. The company should be able ultimately to submit a medical record which will be valuable in industrial hygiene, showing the effects of fatigue, how to counteract it, the effects of particular jobs on health. The purpose of such records and physical examinations is to enable the shifting of women to other work at the first sign of harmful occupational effects. This system will, of course, reduce compensation insurance risks as well as aiding production and lowering the cost of training which might otherwise be wasted.

EMPLOYMENT POLICY AND STAFF AT THE YARD

Selection of the right type of woman for the particular job is only the first step. She must be followed up during the training period and on the job to ensure -

a) Maximum production
b) Good morale in the yard
c) Maintaining good physical condition to lessen absenteeism

In selecting the staff, from the chief personnel officer down to the rest room matron, an integrated program must be visualized. For example, the field representative will check the company's selection by following the employee's production record through the training period and at regular intervals thereafter with the shop foremen.

The entire personnel staff is well aware that theirs is a service job; that selection is from the standpoint of employing women who have the qualifications and meet the standards which have been worked out with the yard management; that service also embraces the responsibility for the welfare of the individual, not alone from the individual's standpoint but also because physically well women, happily adjusted to their jobs mean a stable labor force.

Labor Supply

All applications are being acknowledged and delay in calling in for interview explained. In 6 weeks or 2 months, those who have not been called in will receive a second letter to keep their interest alive and maintain good will toward the organization.

Eligibility

* 1. United States citizenship with documentary proof.
2. Age span - 21 to 45.
3. No women with dependents or children under 14 living at home, who otherwise would be uncared for.
4. If presently employed in a war production plant, applicant must submit release from present employer.

* The status of so-called "friendly aliens" is to be clarified with the proper Government agencies.

5. High school education required, with specialized training or experience desirable.
6. A woman must not be more than 25% overweight in relation to her height.
7. All applicants should live within reasonable transportation distance from the plant.

"Fair Employment Practices" Policy

The first group hired contained a ratio of 10 per cent colored to white, and it is this firm's intention to maintain that ratio as a minimum. - Other minority groups are being handled in the same manner. There is no segregation of colored from white, either at work or in rest and toilet rooms.

Induction Procedure Covers:

1. Introductory explanation of job opportunities and disagreeable features by Personnel Director.
2. Securing proof of citizenship.
3. Interview to rate ability and quality of applicant and determine job placement.
4. Physical examination.
5. Pre-employment record completed, photograph and temporary badge issued.
6. Applicant then sent to Coast Guard Office for pass and fingerprinting.
7. Applicant returns to Personnel Office where all employment data are collected and final card issued.
8. Receives copy of Union contract and Retirement Plan.
9. Receives Safety Equipment and Explanation of Use.
10. Group taken on tour of yard, giving them chance to change their minds. Introduced to foreman in shop where she is to work or to foreman of training school. Safety Engineers to accompany group and point out chances for accidents.
11. Attends special lecture in Rest Room on safety.

Training School

This program is under the general supervision of a Marine Engineering expert. There is a separate building for training classes on Welder, Burner, Shipfitting, Sheet Metal work and Electrical jobs. Machine shop operations and some electrical operations, as well as certain training in other shops, is done on the job with teachers under the immediate direction of the foreman.

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* The status of so-called "friendly aliens" is to be clarified with the proper Government agencies.

The training program also emphasizes safety on the job; uses motion pictures; handbooks prepared for shipyard practice; special lectures.

In addition, the women employees are receiving special safety instruction in the rest room from a member of the Safety Department on how to walk properly, stand properly, and lift weights to reduce fatigue and eliminate strain. These lectures are given once a week through the training period of 4 - 8 weeks. Thereafter, the women will be brought together once a month for a safety class. This firm is also studying how the rest period can be utilized for exercises to reduce fatigue in specific jobs, and how to make the transition from the customary light-weight high-heeled shoe to the heavy-weight, metal-capped, low-heeled shoe used in the yard less difficult.

Wage Policy

Women will receive the same wages as men for same work performed. The starting rate or minimum is 82¢ an hour. Advancement will be made on the same schedule contained in the union contract. Similarly, a woman claiming a skill will be given a test and if passed she will immediately go to the higher rate commensurate with her skill. For example, one woman was put on after a test at the rate of $1.09 an hour as provided in the union contract.

Hours

At present the women are being employed for 48 hours a week, 8 hours daily for 6 days. However, the men work 10 hours a day and in some jobs it will be necessary for men and women to work the same hours. The firm is considering requesting permission to employ women for 5 days of 10 hours each, a maximum of 50 hours a week, or arrange a swing shift for the women and keep them on an 8 hour day. It is felt that a ten hour day is undesirable from the standpoint of health and efficiency for either men or women.

Lunch Period One hour.

Rest Periods

One during morning and another during afternoon -- 10 minutes in rest room plus "traveling time".

Immediate Available Jobs for Women are:

Shipfitting: Laying out small templates
Replacement of bulkheads on platforms
Laying out on plate shop

Tin Shop:	Spot welding Storeroom Cutters Helping to lay out work on bench Pittsburgh machine Clerical work
Copper Shop:	Helper Sweeper
Welding:	Group A - a four (4) week course qualifying as Tack Welders Group B - an eight (8) week course graduating as Probationary Improvers
Burners:	A four (4) week course, finishing as Helpers
Machine Shop:	Small turret lathes Bolt machine Small drill press
Electrical Shop:	Winding coils and armatures

JOBS ON WHICH WOMEN ARE EMPLOYED IN SHIPBUILDING (Construction yards and repair yards)

Tack Welders :
Electric welders : Mainly subassembly welding and not welding on
Acetylene welders: the ways
Spot Welders :

Acetylene burners (flame cutting machines)
Welding checkers
Shipfitters' helpers
Sheet-metal workers' helpers

Electricians' helpers (wire electrical fixtures, repair electrical cords and miscellaneous equipment)
Machine tool operators: drill presses, lathes and bolt cutters
Painters
Optical workers
Foundry workers

Power sewing machine operators and hand sewers (making tarpaulins, clothing bags, slip covers for furniture, mattress covers, etc. in Navy yards)

Loftsmen helpers
Pattern makers' helpers

Tool room keepers
Stockroom and warehouse attendants and clerks
Material chasers

Crane operators
Electric truck drivers and motorcycle drivers
Laborers

Shop clerical workers

WB list

ADDITIONAL JOBS SUGGESTED FOR WOMEN IN SHIPBUILDING

Plate shop: buffing and polishing

Paint shop: brush painting, spray painting, staining, puttying, removing paint, etc.

Rivet heaters
Rivet passers

Electrical shop: armature and coil winding; wiring; repairing and assembling switchboards, soldering, insulating field coils and transformers.

Machine shop: lathes, milling machines, grinding machines, drill presses, shapers, profilers, broaches, automatic screw machines, gear cutters, thread millers and nibblers.

Tool room: machine tool operations on reamers, cutters, and mills, fixtures, gages, etc., operating drills, millers, grinders, shapers, lathes, planers and slotters.

Tool grinding

Bench work of filing, burring, lapping, etc.

Sheet metal shop: spot welding, soldering, riveting, drilling, operating shears, brakes and punch presses; and light assembly operations on metal lockers, boxes, shelves, etc.

Pipe and copper shop: Helpers to coppersmiths and pipefitters on light work
Power hack saw operator
Pipe bending and threading
Drill press operator
Solderer

Boiler shop: Operating drill presses, shears, and punch presses, and doing light riveting.

Boat and joiner shop: Woodworking machines (planers, routers, shapers, lathes;
Band saws and drum sanders)
Nailing and gluing wooden parts
Caulking small boats

Draftsmen and Tracers

Part II. War-Time Employment of Women in Shipbuilding and Allied Industries in Great Britain

The extensive and expanding demands of most munitions industries, including such heavy industries as Iron and Steel and Chemicals, have to a large extent been met by the introduction of women, who, as evidence shows, can do almost every job a man can do except those requiring sheer physical strength. Women are employed in the Iron and Steel Industry to the extent of about 13½ per cent. By contrast, little use has so far been made of female labour in the Shipbuilding industry, although many of the unskilled and semi-skilled operations offer considerable scope for their employment and those employers who have experience of women in their yards report favourably on them.

Present labour demands in the shipbuilding and allied industries run into several thousands and they must increase with the expanding shipbuilding programme. The need is urgent and imperative and brooks no delay. Men are not available from outside the industry; indeed the needs of the Armed Forces may further reduce the number of men already in the industry.

Existing male labour must therefore be used to the best effect, women replacing men on the lighter jobs, thus releasing them for heavier work on other jobs in which their experience can be used to best advantage. In some yards a start has already been made, and examples are quoted at the end of this leaflet of the occupations in which women have successfully replaced men. Employers are urged in their own interest to continue their endeavours to substitute women for men and to experiment in the employment of women in new types of jobs for which men have been considered essential in the past. District Shipyard Controllers and Shipyard Labour Supply Officers have been asked to give all possible help and employers should not hesitate to seek their advice and assistance.

RELATIONS WITH UNIONS

The introduction of women workers is, of course, primarily a matter of management policy. The employment of women on men's work is, however, an important departure from ordinary custom, and full and free consultation with Trade Union officials is indispensable. There is a national agreement between the Shipbuilding Employers' Federation and the Confederation of Shipbuilding and Engineering Unions (which is reproduced in the Appendix), but the fullest co-operation of local officials should be sought. In this connection Yard Committees should be able to assist, whilst the services of the Shipyard Labour Supply Officer should not be overlooked.

JOBS UNSUITABLE FOR WOMEN

Apart from heavy manual work which is obviously unsuitable for women there are Factory Act restrictions on the employment of women in certain process, e.g. red leading, lead processes in plumbing. The Factory Inspector should be consulted where there is any doubt on this score.

JOBS NEEDING MODIFICATION

Changes may be necessary in the case of heavy jobs where the physical effort required may be reduced by providing lighter equipment or lifting tackle, etc. In some cases two women may be substituted for one man, or more usually three women for two men. Certain jobs can be broken down so that the heavy skilled work is done by men and the finishing by women. In other cases men need give only temporary assistance or exercise general supervision. Subject to proper safeguards women have tackled really heavy work, especially in loading vehicles, trucks and machines.

WELFARE FACILITIES

The main essentials in the way of special accommodation for women are separate sanitary conveniences and washing facilities and separate facilities for hanging and drying colthes. Some firms have provided separate wash rooms, changing rooms, rest rooms or canteens; others have set apart a separate part of the canteen for women. The Ministry's Factory and Welfare Department usually requires good welfare amenities if shift work is to be permitted, but if these are available will be found ready to give permission for shift work and overtime. It is often worth while to allow women to clock out a few minutes before the men and to pay out wages separately. The need for giving willing and sympathetic help during the first few weeks will be appreciated when it is borne in mind that women who leave usually do so during the first month of employment; their treatment during this period will determine whether their introduction is successful or not. Such arrangements will be much facilitated by the appointment of a Welfare Supervisor.

Experience during this war has shown the importance of taking special steps to ensure that the women's living conditions outside the factory are also satisfactory. Such points as comfort in billets, recreation, facilities for washing clothers, shopping, etc., are fundamental in keeping women employees happy.

ATTITUDE OF FOREMEN

No difficulties have been reported on this account, and it is expected that any initial doubts will disappear when it is seen how women are able to free men for the heavy work. In one boatyard a woman is acting as forewoman with great success. In smaller yards, especially boatyards, the forewoman can frequently be made the channel for any approach to the Management where there is no Welfare Supervisor.

HOURS OF WORK AND OVERTIME

The hours of women are governed by the Factories Act, 1937, and are normally limited to 48 per week with a limited amount of overtime. Night work is prohibited. Certain relaxations of these restrictions are permitted under the Act and by the Defence (General) Regulations, and firms wishing to employ women on overtime or in shifts should consult H.M. Inspector of Factories for the District as to what is permissible and obtain the necessary permission to do so before employing women in excess of 48 hours per week or at night.

OCCUPATIONS IN WHICH WOMEN ARE ALREADY EMPLOYED IN THE SHIPBUILDING AND ALLIED INDUSTRIES

A. Shipbuilding and Ship-repairing Section

Boiler Shop
- Electric Welders
- Crane Drivers
- Machinists
- Shop Labourers
- Universal Oxygen Cutting Machinists

Coppersmiths' Shop
- Coppersmiths (Light)
- Coppersmighs' Assistants (General)
- Tube Expanders and Facers
- Shop Labourers

Electrical Shops
- See Marine Engineering Section

Fitting Shop
- Bench Fitters
- Bench Fitters' Mates
- Shop Labourers

Foundry
- See Marine Engineering Section

Joiners' Shops
- Boxers
- Detail Bench Hands
- French Polishers
- Jointers
- Routers
- Woodcutting Machinists
- Woodworking Machinists
- Varnishers
- Shop Labourers

Machine Shops
- See Marine Engineering Section

Painting Shops
- Oxide Painters
- Shop Labourers

Pattern Shop
- Machinists
- Pattern Makers' Assistants
- Shop Labourers

Platers' Shed
- Burners' Helpers
- Crane Drivers
- Markers

Platers' Shed--Contd.
- Platers' Helpers
- Radial Drill Operators
- Shearing Machine Operators
- Shed Labourers

Plumbers' Shop
- Plumbers (Light)
- Plumbers' Assistants (General)
- Shop Labourers

Sheet Iron and Sheet Metal Shops
- Sheet Metal Workers
- Sheet Metal Workers' Assistants
- Machinists
- Shop Labourers

Smitheries
- Drillers
- Hammer Women
- Universal Oxygen Cutting Machinists
- General Labourers

Welders' Shops
- Electric Welders
- Electric Welders' Trainees
- Shop Labourers

Yards
- Crane Drivers
- Scrap Sorters
- Truck Drivers
- Yard Labourers

Abroad Ship
- Cleaners
- Electricians' Mates
- Heater Women
- Holders Up
- Painters
- Red Leaders
- Riveters (Light)
- Welders
- Welders' Assistants
- General Labourers

B. Marine Engineering Section

Boiler Shop
- Electric Welders
- Electric Welders' Assistants
- Gas Cutter Operators
- Grinders
- Light Platers and Helpers
- Oxy-Acetylene Welders
- Machinists
- Markers Off
- Pneumatic Hole Borers
- Shop Labourers

Electrical Shops
- Armature Winders
- Assembly Fitters
- Assistants (Electrical)
- Assistants (Stores)
- Crane Drivers
- Machinists
- Mica Moulders
- Motor Attendants
- Shop Labourers
- Spray Painters

Foundry
- Core Dressers

Foundry--contd.
- Core Makers
- Core Sand Mill Workers
- Core Oven Workers
- Core Drier
- Electricians
- Electricians' Assistants
- Fettlers
- General Labourers
- Moulders (Various)
- Machine Moulders
- Mould Driers
- Sand Sifters
- Truck Drivers

Fitting and Erecting Shops
- Assembly Fitters (Bench)
- Assembly Fitters (Detail)
- Assembly Fitters (Turbine)
- Assembly Fitters (Valve)
- Brass Finishers
- Fitters (Erectors)
- Fitters (Toolroom)

Machine Shops
- Automatic Operators

Machine Shops--contd.
- Borers
- Capstan Operators
- Centre Lathe Turners
- Drillers
- Grinders
- Milling Machine Operators
- Planing Machine Operators
- Power Saw Operators
- Radial Drillers
- Shaping Machine Operators
- Turret Lathe Operators
- Shop Labourers

Pattern Shop
- Machinists

Pattern Shop--contd.
- Patternmakers' Assistants
- Shop Labourers

Spring Making
- Hot Formers
- Hammer Drivers
- Furnace Feeding
- Coilers
- Coiling Machine Operators
- Hardeners
- Grinders
- Drillers
- Reamerers
- Labellers

C. Boatbuilding Section

Construction (Heavy)
- Caulkers (Wood)
- General Labourers
- Joiners
- Joiners' Assistants
- Painters
- Shipwrights
- Shipwrights' Assistants

Construction (Light)
- Boatbuilders
- Boatbuilders' Assistants
- Caulkers (Wood)
- Electrical Machinists (Sanding)
- General Labourers
- Joiners
- Joiners' Assistants
- Painters

Construction (Fitting Out)
- Coppersmiths
- Coppersmiths' Mates
- Electricians
- Electricians' Mates
- Engine Fitters

Construction (Fitting Out)--contd.
- Engine Fitters' Mates
- General Labourers
- Plumbers
- Plumbers' Mates

Machine and other Shops
- Assembly Fitters
- Capstan Operators
- Centre Lathe Turners
- Coppersmiths
- Coppersmighs' Assistants
- Drilling Machine Operators
- Electrical Fitters
- Electrical Fitters' Mates
- Engine Fitters
- Engine Fitters' Mates
- Milling Machine Operators
- Plumbers
- Plumbers' Assistants
- Sheet Metal Workers
- Sheet Metal Workers' Assistants
- Shop Labourers
- Welders (Electric)
- Welders (Oxy-Acetylene)
- Wood Working Machinists

In addition to the above productive work women are extensively employed on the administrative side, and in the Drawing Office.

Ministry of Labour and National Service,
St. James's Square,
London, S.W.1.

August, 1942.

* * * *

APPENDIX

AGREEMENT

between

THE SHIPBUILDING EMPLOYERS' FEDERATION

and

THE CONFEDERATION OF SHIPBUILDING AND ENGINEERING UNIONS

EMPLOYMENT OF WOMEN IN SHIPBUILDING AND SHIP-REPAIRING ESTABLISHMENTS TO MEET WAR-TIME REQUIREMENTS

It is agreed between the Shipbuilding Employers' Federation and the Confederation of Shipbuilding and Engineering Unions, in relation to the ever-increasing pressure on the productive capacity of the Industry, coupled with the gradual diminution of the Country's available manpower, that where suitable male labour is not longer available women shall be employed in shipbuilding and ship-repairing establishments for the period of the war on work normally done by male labour.

1. Women employees under 21 years of age shall be paid on an age basis the corresponding rates and wages paid to boys and youths, irrespective of the work on which they are employed. These rates are as follows:--

Age	Basic Rate	*Bonus	Total Rate including bonus
16	14/3	4/9	19/-
17	16/-	7/1½	23/1½
18	23/-	9/6	32/6
19	28/-	11/11	39/11
20	32/9	14/3	47/-

2. Women employees 21 years of age and over entering employment for the first time shall during the first eight months of their employment be paid the rate corresponding to age 20 in Clause 1 of this Agreement, irrespective of the work on which they are employed.

---

* Under the National Arbitration Tribunal Award of the 10th December, 1941, the rate of bonus of workers in the Shipbuilding and Ship-repairing Industry has been increased.

3. Women employees starting before age 21 will on reaching age 21 continue to be paid the rate corresponding to age 20 in Clause 1 of this Agreement unless and until they have completed a minimum of eight months' service in the Industry.

4. Women Employees 21 years of age and over who have completed eight months' service in the Industry shall be paid as follows:--

(a) In unskilled and semi-skilled classes:

(i) The full time rate and bonus of the displaced male employee where the woman is able to perform the whole of the duties of the displaced male employee without extra assistance or supervision.

(ii) A rate of 53/6 per week, composed of 32/9 basic rate and 20/9 bonus, where for any reason related to the nature of the work or to the individual woman's capacity or experience, she is unable to perform the whole of the duties of the displaced male employee without extra assistance or supervision.

(b) In skilled classes:

(i) The full time rate and bonus of the displaced male employee where the woman is able to perform the whole of the duties of the displaced male skilled employee without extra assistance or supervision.

(ii) A rate of 62/9 per week, composed of 40/- basic rate and 22/9 bonus, where for any reason, whether related to the nature of the work or to the individual woman's capacity or experience, she is unable to perform the whole of the duties of the displaced male skilled employee without extra assistance or supervision.

5. The wages of women employees in shipbuilding and ship-repairing shall fluctuate at the same time as national fluctuations take place in the wages of adult male employees on the following basis:--

(a) Women under 21 years of age the same fluctuations, according to age, as apply to the wages of boys and youths.

(b) Women 21 years of age and over in the same proportion as the total wages including bonus of each woman employee under this Agreement bear to the total wages including bonus of male employees of the same class.

6. The employment of women in skilled classes shall otherwise be subject to the conditions of the various agreements between the Federation and the individual Trade Unions in regard to relaxation of existing customs and practices.

7. A list of all women introduced in shipbuilding and shiprepairing to meet war-time requirements shall be kept by each firm and supplied from time to time through the Local Association of Employers to the District Secretary of the Confederation of Shipbuilding and Engineering Unions.

8. The provisions of the Agreement do not affect the employment of women in occupations in which women were employed in the Industry before the war.

Signed on behalf of:

THE SHIPBUILDING EMPLOYERS' FEDERATION:

J. M. Ormston.
Wm. Watson.

Signed on behalf of:

THE CONFEDERATION OF SHIPBUILDING AND ENGINEERING UNIONS:

J. Stephenson.
E. Gilbert.

17th July, 1941

November 17, 1942

Mrs. Elinore M. Herrick
Director of Personnel and Labor
Relations
Todd Shipyards Corporation
1 Broadway
New York City

Dear Mrs. Herrick:

In compliance with your request that we look over the report prepared by the Todd Erie Basin yard designed to show all the sources of possible occupational hazards in that shipyard, I submit to you our suggestions and comments on exposures and preventive measures. Also a copy of extracts from a paper by J. W. Thomson, Safety Engineer, Bethlehem Steel Company, Shipbuilding Division, San Francisco, Calif. I think you will find this helpful.

Thank you so much for sending this report to us and giving us an opportunity to comment.

With best wishes,

Sincerely yours,

Mary Anderson, Director

MA:IS

November 17, 1942

MEMORANDUM

To: Miss Anderson

From: Margaret T. Mettert

Re: Occupational Hazards in Todd Shipyard as Reported by Mrs. Elinore Herrick

The hazards discussed may be listed as follows:

Welding
Acetylene and oxygen gas
Fire hazards
Fumes from material on which work is done

Painting
Red lead paint

Cleaning metal surfaces and engine parts
1. Use of H Cl and H_2SO_4 - principal hazard is to acid burns
2. Use of trichlorethylene - work is done outdoors. Hands protected by rubber gloves.

Pouring rudder stock bearings
Lead fumes hazardous in confined spaces

Grinding tools and equipment - fine dust produced

Heating with coke fires - CO produced

Machine shop work
Lubricating and cutting oils - Personal cleanliness emphasized

Tool case hardening
Use of potassium cyanide

Silver soldering - flux of boric acid and fluoride. No special consideration to ventilation for this work.

Carpenter shop -
1. Wood dust - ventilation considered inadequate
2. Rock wool - Fine particles imbed themselves in skin causing irritation and opening way for infection.

Pattern shop
1. Red lead paint for completed patterns
2. Wood alcohol in small quantities

Blacksmith shop
1. Lime for annealing (used with great care)
2. Potassium cyanide - tool hardening

Cleaning electric motors
Carbon tetrachloride - masks provided

Tight testing of tanks
Mercury used - mentions danger of ingestion by mouth

Babbitt operations
Lead exposure from melting of metals containing lead

Methods of protection from these hazards are not discussed in Mr. Obst's paper except in occasional brief statements.

MTM:ml

U. S. DEPARTMENT OF LABOR
WOMEN'S BUREAU
Washington

COMMENTS ON EXPOSURES AND PREVENTIVE MEASURES

I. Welding

A recent epidemic of conjunctivitis affecting many shipyard workers emphasized the need of sterilization of goggles, respirators and any other personal protective equipment before issuing to other workers.

II. Exposures to lead in painting and in melting metal

Exposure to lead is hazardous to any worker but there is evidence that the effects are especially serious to women. The harmful effects of lead may seriously injure the offspring as well as the woman herself. Both engineering protection and close medical supervision are necessary. Any worker showing early signs of lead poisoning should be shifted promptly to other work. No worker below par in general health should be placed where lead is a possible hazard and no young woman under 21 or pregnant woman should be in such work.

III. Trichlorethylene exposure

Check should determine that concentration in the air is well under the maximum allowable limit of 200 particles per million cubic feet of air.

IV. Use of cutting oils

While personal cleanliness is of primary importance as stated, it is also important (1) to clean from the oil metal slivers and particles that will cause abrasions and open the way for dermatitis; (2) to provide clean wiping cloths; (3) to provide soaps and creams that will not only clean the skin but that will not defat the skin; (4) to transfer workers who show evidences of allergic reaction; (5) to analyze oil when skin infection occurs to ascertain whether other dermatitis producing material might be included in the oil, e.g., chlorine compound.

V. Carbon tetrachloride

Exposure may have serious effects on the liver and no pregnant woman should be exposed to it.

There is difference of opinion as to the maximum allowable concentration. Some authorities set the limit as low as 35 p.p.m., others as high as 100 p.p.m.

VI. Exposure to Fluorides

As Mr. Obst recognizes serious effects are known to result from exposure to fluorides and attention should be given to the extent of exposure in the soldering described and to methods of drawing off fumes.

VII. Exposure to mercury

Mercury is not only poisonous on ingestion by mouth as described in the paper, but vaporizes at ordinary temperatures and may be the cause of serious chronic poisoning. It is known to cause nervous difficulties, loss of teeth, and kidney ailments. A threshold limit for safe breathing of mercury vapor has been set at 0.1 to 0.2 milligrams per cubic meter of air.

VIII. Checking fumes

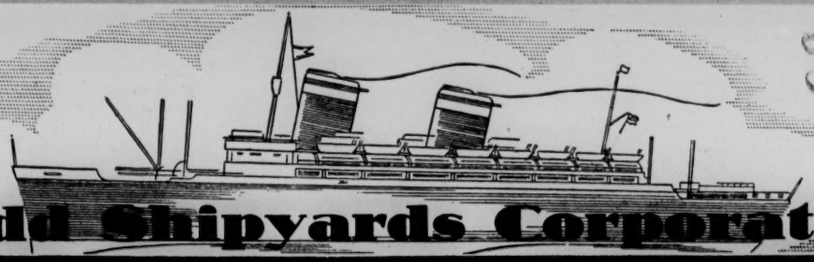
Routine check on the escapement of fumes is very important. Proof that concentration is well below allowable limits together with frequent medical check of exposed individuals is the best guarantee against poisoning.

IX. Ventilation

The enclosed paper by Mr. J. W. Thomson gives an interesting summary of some of the special problems of ventilation in shipbuilding.

MTM

368



Todd Shipyards Corporation

NEW YORK OFFICE · 1 BROADWAY · TELEPHONE DIGBY 4-6900 · CABLE "ROBIN" NEW YORK

PLEASE ADDRESS YOUR REPLY TO

TODD SHIPYARDS CORPORATION
1 Broadway
New York, N.Y.
Digby 4-6900

TODD ERIE BASIN DRY DOCKS INC.
Foot of Dwight St.
Brooklyn, N. Y.
CUmberland 6-6820

TODD HOBOKEN DRY DOCKS INC.
Park Ave. & 17th St.
Hoboken, N. J.
HOboken 3-0700

TODD COMBUSTION EQUIPMENT, INC.
601 W. 26th St.
New York, N. Y.
BRyant 9-4725

TODD MOBILE DRY DOCKS INC.
Mobile, Ala.

TODD GALVESTON DRY DOCKS INC.
Galveston, Texas

HOUSTON SHIPBUILDING CORP.
Houston, Texas

SEATTLE-TACOMA SHIPBUILDING CORP.
Seattle & Tacoma, Wash.

TODD SEATTLE DRY DOCKS, INC.
Seattle, Wash.

SOUTH PORTLAND DRY DOCK AND REPAIR COMPANY
South Portland, Me.

Affiliated Companies

TODD-JOHNSON DRY DOCKS INC.
New Orleans, La.

TODD-BATH IRON SHIPBUILDING CORP.
South Portland, Me.

SOUTH PORTLAND SHIPBUILDING CORP.
South Portland, Me.

February 25, 1943

"WE CONTRACT ONLY UPON THE FOLLOWING TERMS, APPLICABLE TO EVERY CONTRACT: IN THE CASE OF A VESSEL WE HAVE A LIEN UPON THE VESSEL FOR OUR BILLS; ALL TIME CONTRACTS ARE SUBJECT, WITHOUT RESPONSIBILITY ON OUR PART, TO DELAY IN CASE OF STRIKE, LABOR DIFFICULTIES, FIRE OR CAUSES BEYOND OUR CONTROL; OUR LIABILITY IN CASE OF DEFECTIVE WORKMANSHIP OR MATERIAL IS LIMITED STRICTLY TO THE PROPER REPLACEMENT THEREOF.
"FURTHERMORE, WE UNDERTAKE TO PERFORM WORK ON AND DRY DOCK VESSELS AND PROVIDE BERTH, WHARFAGE, TOWAGE AND OTHER SERVICE AND FACILITIES ONLY UPON CONDITION THAT WE SHALL NOT BE LIABLE IN RESPECT TO ANY ONE VESSEL, DIRECTLY OR INDIRECTLY IN CONTRACT, TORT OR OTHERWISE, TO ITS OWNERS, CHARTERERS OR UNDERWRITERS FOR ANY INJURY TO SUCH VESSEL, ITS CARGO, EQUIPMENT OR MOVABLE STORES, OR FOR ANY CONSEQUENCES THEREOF, UNLESS SUCH INJURY IS CAUSED BY OUR NEGLIGENCE OR THE NEGLIGENCE OF OUR EMPLOYEES AND IN NO EVENT SHALL OUR AGGREGATE LIABILITY TO ALL SUCH PARTIES IN INTEREST FOR DAMAGE SUSTAINED BY THEM, AS A RESULT OF SUCH INJURY, EXCEED THE SUM OF $300,000.00.
"IN CONNECTION WITH THE ACCIDENT AND/OR INDEMNITY AND/OR INSURANCE CLAUSES, IF ANY, CONTAINED IN YOUR SPECIFICATIONS, RELATING TO LIABILITY FOR PERSONAL INJURIES, PLEASE NOTE THAT WE DO NOT AGREE TO SAME, IN SO FAR AS THEY UNDERTAKE TO IMPOSE ANY LIABILITY OR ANY OBLIGATIONS TO TAKE OUT OR MAINTAIN INSURANCE BEYOND THE LIABILITIES OR THE OBLIGATIONS TO INSURE IMPOSED UPON US BY LAW."

RECEIVED FEB 26 1943 DEPARTMENT OF LABOR

Miss Mary Anderson, Director
Women's Bureau
U. S. Department of Labor
Washington, D. C.

Dear Miss Anderson:

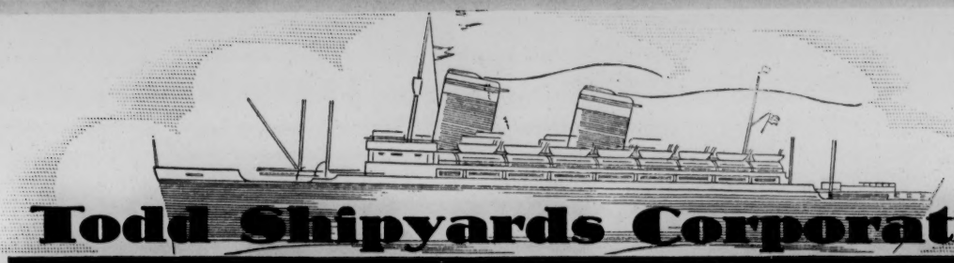
I have investigated the complaint, which was forwarded by your office, made in the anonymous letter addressed to Miss Perkins and signed "Just a Navy Man". I am informed that we are not substituting men for women cleaners at Todd Erie Basin Dry Docks Inc.

This is a new criticism. Generally the shoe is on the other foot!

Sincerely yours,

Margaret Sawyer

Margaret Sawyer
Assistant to Director of
Personnel and Labor Relations



Todd Shipyards Corporation

NEW YORK OFFICE: 1 BROADWAY · TELEPHONE DIGBY 4-6900 · CABLE "ROBIN" NEW YORK

PLEASE ADDRESS YOUR REPLY TO

TODD SHIPYARDS CORPORATION
1 Broadway
New York, N.Y.
Digby 4-6900

November 13, 1942

"WE CONTRACT ONLY UPON THE FOLLOWING TERMS, APPLICABLE TO EVERY CONTRACT: IN THE CASE OF A VESSEL WE HAVE A LIEN UPON THE VESSEL FOR OUR BILLS; ALL TIME CONTRACTS ARE SUBJECT, WITHOUT RESPONSIBILITY ON OUR PART, TO DELAY IN CASE OF STRIKE, LABOR DIFFICULTIES, FIRE OR CAUSES BEYOND OUR CONTROL; OUR LIABILITY IN CASE OF DEFECTIVE WORKMANSHIP OR MATERIAL IS LIMITED STRICTLY TO THE PROPER REPLACEMENT THEREOF.

"FURTHERMORE, WE UNDERTAKE TO PERFORM WORK ON AND DRY DOCK VESSELS AND PROVIDE DERTH, WHARFAGE, TOWAGE AND OTHER SERVICE AND FACILITIES ONLY UPON CONDITION THAT WE SHALL NOT BE LIABLE IN RESPECT TO ANY ONE VESSEL, DIRECTLY OR INDIRECTLY IN CONTRACT, TORT OR OTHERWISE, TO ITS OWNERS, CHARTERERS OR UNDERWRITERS FOR ANY INJURY TO SUCH VESSEL, ITS CARGO, EQUIPMENT OR MOVABLE STORES, OR FOR ANY CONSEQUENCES THEREOF, UNLESS SUCH INJURY IS CAUSED BY OUR NEGLIGENCE OR THE NEGLIGENCE OF OUR EMPLOYEES AND IN NO EVENT SHALL OUR AGGREGATE LIABILITY TO ALL SUCH PARTIES IN INTEREST FOR DAMAGE SUSTAINED BY THEM, AS A RESULT OF SUCH INJURY, EXCEED THE SUM OF $300,000.00.

"IN CONNECTION WITH THE ACCIDENT AND/OR INDEMNITY AND/OR INSURANCE CLAUSES, IF ANY, CONTAINED IN YOUR SPECIFICATIONS, RELATING TO LIABILITY FOR PERSONAL INJURIES, PLEASE NOTE THAT WE DO NOT AGREE TO SAME, IN SO FAR AS THEY UNDERTAKE TO IMPOSE ANY LIABILITY OR ANY OBLIGATIONS TO TAKE OUT OR MAINTAIN INSURANCE BEYOND THE LIABILITIES OR THE OBLIGATIONS TO INSURE IMPOSED UPON US BY LAW."

TODD ERIE BASIN
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TODD HOBOKEN
DRY DOCKS INC.
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South Portland, Me.

SOUTH PORTLAND
SHIPBUILDING CORP.
South Portland, Me.

Miss Mary Anderson
Director, Women's Bureau
U. S. Department of Labor
Washington, D. C.

Dear Mary Anderson:

I enclose a report prepared for me at our Todd Erie Basin yard designed to show all the sources of possible occupational hazards in that shipyard.

I shall be grateful for any suggestions you can give me, either

(a) adding to this report

(b) how we should handle this problem through special equipment

(c) what types of medical check-up or care we should provide

and any other guidance that you can give me.

Very truly yours,

TODD SHIPYARDS CORPORATION

Elinore M. Herrick

Elinore M. Herrick
Director of Personnel
and Labor Relations

144
Ex. ref
Rand.

FROM: Elinore M. Herrick November 11, 1942

TO: Mr. Joseph Haag, Jr.
Mr. Charles Haynes
Mr. Harry Hill
Mr. Henry Obst
Miss Margaret Sawyer
Dr. Margaret Sullivan
Miss Constance Ekstrand
Mrs. Phyllis S. Fraser
Miss Thelma Older

The attached report (dated October 29th) was prepared at my request under the direction of Henry D. Obst at Todd Erie Dry Docks Inc. It is designed to show us the possible sources of occupational hazards to both men and women employees. I am submitting it to the Maritime Commission and their expert, Dr. Philip Drinker of Harvard, to the U. S. Women's Bureau, the Director of the New York State Bureau of Industrial Hygiene, and other experts in this field, including Dr. Alice Hamilton, and asking for their suggestions and guidance in meeting this phase of our safety program.

E. M. H.

October 29, 1942

Re: Plant use of chemicals, poisons, gases and related work conditions.

In collaboration with Mr. Frank Healy, Chief Chemist, have made a rather complete survey of the Plant with reference to the above subject to determine if any material or working condition may be injurious to employe health. The following results have been obtained:

IRONWORKER DEPARTMENT

Acetylene and oxygen gas -- employed in the cutting and heating of plate and other form work aboard vessel and in shop. Fires or explosions of iron bottle containers are rare and the leakage of pure acetylene in any quantity to affect a person is negligible because of daily inspection of all torches and control valves by the Acetylene Department. While working aboard vessel in confined areas, fire hazard is controlled by use of firewatches. Accumulation of carbon dioxide (CO_2) or carbon monoxide (CO) in the air of confined spaces is taken care of by forced draft blowers and masks supplied by Safety Equipment Department.

At the present time the majority of jobs within the yard are taken care of by Acetylene and Oxygen supplied from piping formed by processing calcium carbide and water while the oxygen is converted from a liquid form to gaseous form and then pumped through the lines which are connected to the various shops. Processing Plant and its equipment, piping lines, outlets are regularly inspected and repaired and stringent regulations are in force with respect to operation of the equipment or admission to the Processing Building.

Electric welding is taken care of in much the same way as is acetylene and oxygen work. Firewatches, forced draft blowers and masks are used. Fumes from the combustion and flux on the electrodes are therefore rendered harmless although a certain amount is breathed in by the operator but with no ill effects. The same is true in acetylene and oxygen burning. Some electric welding is done on galvanized and stainless steel. This is considered hazardous to health, especially so in confined spaces. Utmost caution is taken here in providing masks and blowers. Workers are permitted a "blow" in the open air every two hours and it is the usual practice to alternate operators every day. The type of fumes given off here are a mixture of metallic oxide dusts which are extremely noxious and care is therefore taken not to expose the operator for any undue length of time.

This Department also uses a certain amount of red lead paint which is supplied to us in powdered form. It is mixed with turpentine or benzine and the resulting liquid is used for painting metal surfaces. Used also by piece-work counters. Chippers and Caulkers use a type of red lead packing when connecting two plates, etc. This red lead, no matter whether it be powder, putty or packing, can be dangerous to an employe's health if a sufficient quantity were taken internally, either breathed through the nose or through the mouth by way of the hands. Mr. Healy, Chief Chemist, states the lead can also be absorbed through the skin and for this reason protective measures should be taken for education of the employe in this quarter; to advise them also that cleanliness of hands is most important when eating lunch.

Coal gas (CO_2 - CO) is derived from rivet heating forges. Precautions are taken to provide adequate ventilation in all spaces when these fires are used below decks or in other ship spaces.

OUTSIDE MACHINIST DEPARTMENT

Following a talk with Fred Hess, it was reported that they do at times use muriatic (hydrochloric, HCL) and sulphuric acid (H_2SO_4) for cleaning metal surfaces. Carbon dioxide (CO_2) and ammonia are used in refrigeration systems in ice-boxes.

Have discussed the Outside Machinist Department situation with Frank Healy and he has this to add:

At times it is necessary to clean out oil grooves in crank shafts and the tube elements of oil coolers. An outside contractor performs the work on board vessel by forcing through trichlorethylene. Mr. Healy has been in attendance at this work and states the air of engine room showed positive evidence of the presence of trichlorethylene fumes in the air. These are considered harmful.

In addition new boiler tubes are delivered to us covered with a slushing oil. Prior to installation, the practice is to boil these tubes in sodium triphosphate to remove to greater amount of the oil covering and then immersed in liquid trichlorethylene for a final cleansing bath. This work is always performed outdoors and the workmen are protected by rubber gloves.

Kerosene is used under pressure for heating torches in the repair of propeller wheels, etc.

We have had occassion to renew rudder stock bearings in place. On some ships, such as the Vulcania and Saturnia, the rudder stock runs up through the hull for several decks and the bearing at each deck is required to be poured in place due to the considerable expense and work involved in taking this work completely down.

The bearings are located in confined spaces and when being poured there is a danger of lead fumes being inhaled by the worker should proper ventilation not be provided.

MACHINE SHOP (Main Floor)

Fred Billstein tells me that the bulk of all work on small engine parts and other auxiliaries is usually sent out for cleaning by chemical treatment to the Maritime Chemical Co. It is not found practicable to send out large cylinder heads and similar other equipment in view of the moving expenses, etc. For this reason, we handle this work ourselves by treating the surfaces with muriatic (HCL). This chemical sometimes has a very pungent odor and has a deleterious effect on the lungs. Ventilation here is always provided.

A very large amount of dry tool and equipment grinding on such items as rudders, etc. is performed here. Carborundum and similar abrasive stones and wheels are used which give off an injurious fine dust.

The matter was discussed with Mr. Healy, Chief Chemist, who has thoroughly defined the conditions under which such work may be done. I have in turn spoken to Fred Billstein, Shop Foreman, and Ralph Vitale, Assistant Foreman Turbine Department, who will make certain that the necessary safety conditions are fulfilled and proper masks and other safety equipment shall be worn when such abrasives are in use.

Very frequently, large coke fires are prepared on the main shop floor for the purpose of shrinking liners to shafts or pins to cranks, etc. The fires naturally produce a large quantity of CO and CO which ? mainly rise to the roof of the Machine Shop. The Turbine Department being located on the balcony is subjected to this gas during the period the fires are in operation. It was brought to my attention that the forced draft blowers (2) in the Turbine Department were not in working order and had not been for some time. I was informed that several requests had been made by the Turbine Department to put this draft ventilation system in operating order but that no action had been taken in this matter. I therefore immediately contacted Frank Ward, Maintenance Superintendent. He was not in his office at the time but I informed Mr. Carroll, his assistant, of the condition and told him that several crank pins were to be shrunk in the Machine Shop that afternoon (10-23-42). I advised him that it would be to the best interests to have the Electricians Department put the motor of the ventilation system in operating condition before the coke fires were started. Mr. Carroll said he would attend to the work immediately.

A huge quantity of lubricating and cutting oils are used in the Machine Shop in the course of operations, the men cannot help but get this oil on their hands and faces. So far as the oil ingredients being harmful to the skin, this is a controversial subject and one which has never been quite definitely determined whether the causes of dermatitis, rash, eczema, etc., may be attributed to the oil itself or to an allergy of the person or other biological reasons. Mr. Healy states that the topic is one which has been under study for many years by eminent authorities and to this day there have been no conclusive findings.

It is generally accepted that the oil has nothing whatever to do with the various forms of dermatitis supposedly resulting from exposure to oil; that it is purely a matter of cleanliness. It is quite possible that the oil may aid in blocking up glands in the skin, and if not thoroughly cleansed, may result in festering. Too, a person may receive abrasions on the skin through injury and if dirty oil is allowed to come in contact with the open skin, an infection may result. Mr. Healy has gone into the matter quite thoroughly and is inclined to agree that yard injury cases of this kind can be best combatted by education of the employes along the lines that cleanliness is next to Godliness.

Of course, the Machine Shop is not the only place where such lubricating and cutting oils are used. Large quantities are also used in the Pipe Shop, Outside Machinist, etc.

MACHINE SHOP (Turbine Division)

Ralph Vitale informs that the only chemical in use is cyanide of Potassium for the case hardening of tools. This work was formerly done in the shop but Mr. Healy, Chief Chemist, instructed that the work be performed outdoors due to inadequate ventilation in the shop. Therefore, a special room was built and set aside in the Babbitt Shop (Flange Block building) for this work. An inspection of these quarters shows that it is equipped with forced draft blowers.

Some silver soldering is done in connection with stainless steel blading for turbine motors. A 50/50 flux composed of boric acid and Fluoride is used in this soldering operation, and the Chief Chemist informs that this is a toxic poison when volatilized. There does not appear to be any special consideration given as to ventilation when this work is done in the Turbine gallery or on the shop floor.

CARPENTER SHOP

No chemicals of any description are used. However, the shop is provided with forced draft ventilation system which is attached to all machines to carry off accumulation of fine wood dust. There is a certain amount of this wood dust present in the air at all times but not in sufficient quantities to be termed a hazard either to the employe's health by reason of breathing this dust internally or a hazard in so far as explosions are concerned. There is sufficient ventilation to prevant any such explosion taking place, and, of course, strict regulations are in force with regard to smoking or use of any open fires. Mr. Healy has the matter of the employe's health in these surroundings under consideration at the present time and he has an investigation pending to determine if there is sufficient danger here to warrant the company taking measures to alleviate the condition.

Also, there is some knife edge grinding on axes, chisels, and other trade implements done in the Carpenter Shop. This grinding is done on wet abrasive stone and there is, therefore, no danger here.

Rock Wool -- used for insulation purposes in cold rooms, etc., aboard ship. There are several types of rock wool -- some have a silica (non-metal) or a silicate (metal) content. Extreme care should be taken here for the fine particles of silica or silicate are especially harmful when breathed internally (may result in silicosis). Too, the small particles imbed themselves into the exposed parts of the skin, neck, wrists, etc., causing considerable irritation, and if not properly taken care of may become infected. Rubber gloves are used by employes in handling, but this has not proved entirely effective, for as previously pointed out, the silica or silicate particles attach the face, wrists, ankles, etc.

WOOD CAULKERS

This Department uses a heated pitch solution, resin compound which is applied to caulked seams on ship decks. No particular danger outside of upsetting the pitch pot.

JOINERS

There is a greater problem in this shop as to elimination of wood dust than there is in the Carpenter Department. This is so because there are many more wood working machines in operation the greater part of the day. The suction duct system for removal of wood dust, of course, is not 100% effective. This is not particularly hazardous during the warm weather months when all doors and windows are open; the cold weather months present the problem. Danger of explosion is nil. Mr. Healy, Chief Chemist, as previously mentioned, is at the present time going into the matter of just how dangerous the wood dust may be to the employes' health and will report his findings when completed.

PATTERN SHOP

Wood alcohol is used in this Department for thinning shellac but the quantity stored and in use is not sufficient to warrant changes.

Some red lead paint is used for painting completed patterns prior to sending them to outside foundaries. The danger here would be the obsorbtion into the system of the lead contained in the paint, but the situation is deemed to be under control.

BLACKSMITH DEPARTMENT

This shop at times uses lime (Calcium oxide -- CaO) for annealing purposes, but I am informed that extreme care is taken in the handling of this chemical. Also, cyanide of Potassium is employed in the case hardening of tools and other metal surfaces. The shop is rather large,

providing plenty of ventilation during the summer months, and therefore there does not appear to be any danger when using this chemical. However, should the doors be closed, as will be necessary in the winter time, when taking into account the numerous open fires which do somewhat decrease the oxygen in the air and give off CO and CO_2 , it may be necessary, as in the case of the Turbine Department, to do the work outdoors or to use the facilities of the Turbine Department in the Flange Blocks building.

ELECTRIC SHOP

There is only one chemical used here. Carbon tetrachloride (CCL_4) is employed for cleaning electric motors, wires and other parts. Is non-inflammable and therefore is a desirable solvent, but as Mr. Healy points out excessive inhalation of the fumes of this substance is positively to be avoided, for it is detrimental to kidneys and liver.

Contrary to popular belief and usage of the CCL_4, it is used rather freely in all trades for any cleaning purpose, such as for clothes, etc., and is considered to be entirely safe. It should be if proper ventilation were provided.

In the electric shop, during the summer months, any large scale cleaning of motors, etc., is done out of doors, and the workmen are provided with the proper type masks.

TINSMITH SHOP

Muriatic (HCL) is used for cleaning metal surfaces preparatory to soldering. An inspection of the shop shows that much electric and acetylene welding is done on the shop floor. Forced draft ventilation ducts are provided but the effectiveness of the set-up is somewhat dubious. In addition, the enclosure shields used to set aside the welders and to protect the eyes of employes working nearby from the glare, could be improved. There are many gaps through which the glare penetrates.

COPPER SHOP

Jack Drysdale, Foreman, reports the use of diluted sulphuric acid for cleaning brass and copper; and muriatic for soldering, tinning, and miscellaneous cleaning.

PIPE SHOP

The Pipe Shop does also come into contact with refrigeration systems and relative chemical agents such as ammonia, CO_2, Freon, etc. Refrigeration systems, no matter what the agent, or whether the Outside Machinist Department or Pipe Shop is repairing the unit, are always to be treated with utmost caution.

Mercury (quicksilver) is occasionally used for tight testing of tanks. The danger here lies in the possibility of an employe getting this substance into his mouth. The effects are deadly.

PLUMBER DEPARTMENT

Some sulphuric acid is used for soldering purposes.

Bar lead is melted in the wiping of lead joints. There does not appear to be any danger of inhalation of lead fumes as the quantities prepared are small and the number of joints wiped are today at a minimum due to the replacement of this type of joint by threaded pipe, although sometimes specifications may call for a lead joint.

BABBITT DEPARTMENT (Division of Machine Shop)

The babbitt operations on bearings and other wearing surfaces require the melting of Post Motor Marine, Parsons, or other metals which contain a certain amount of lead. The babbitt shop is located in a portion of the Flange Blocks building and may be considered to be open on two sides, thus providing adequate ventilation and protection against lead poisoning.

In the matter of tinning of bearing beds, a salts chemical compound is used instead of the usual liquid muriatic acid. It has the same base as muriatic.

SHIP RIGGING DEPARTMENT

Sulphuric acid is used occasionally when cleaning wire cables and sockets for connection by zinc soldering.

FIRE WATCHES AND FIRE GUARDS

In the normal course of Plant premises and ship protection, automatic wall and hand type fire extinguishers are used.

The wall extinguishers are of the acid-soda-water type. When overturned, necessary for operation, the suphuric acid and bicarbonate of soda are combined to provide the pressure for the water which is the sole extinguishing agent; acid-soda-water is used ordinarily for all emergencies except electric wire fires. The chemical is somewhat of a conductor and is therefore undesirable in such cases.

The small hand extinguishers used by Fire Watches and Fire Guards are filled with carbon tetrachloride (CCl_4).

The H_2SO_4, Soda, and CCl_4 are purchased by us in 1 quart containers and is completely used up in one charge of equipment. This eliminates any danger as to inhalation of fumes.

GARAGE

Use of kerosene in the repair of motors and other machinery.

For large scale cleaning of motors, kerosene is mixed with a product called "Gunk", a high viscosity solvent. This has Fire Department approval, #270.

OFFICE MACHINE MAINTENANCE

Due to the considerable increase of work specifications calling for the overhaul of ship office machines such as typewriters, etc., and also to the addition of many machines for administrative use, we have found it necessary to employ a maintemance mechanic full time to perform these duties.

The plated and unpainted parts of these machines are attacked by the salt sea air and as a consequence much rust is formed.

In order to put into operation condition, a chemical solution called "Fedratone" composed of ether, kerosene and parafine oil is used. This product has the approval of the New York Fire Department, Certificate #934.

In addition, liquid cyanide of potassium is used in more stubborn rust condition cases.

CHEMIST LABORATORY

Gas Conditions Aboard Vessel

The Chemist Department is in complete charge of the petroleum and related gas analysis inspection of vessels' various tanks, storage spaces, boiler and engine rooms, etc. This particular phase is under positive control at all times insofar as permitting employes to work in affected areas or to allow hot or other dangerous work to be performed.

348

November 17, 1942

MEMORANDUM

To: Miss Anderson

From: Margaret T. Mettert

Re: Occupational Hazards in Todd Shipyard as Reported by Mrs. Elinore Herrick

The hazards discussed may be listed as follows:

Welding
Acetylene and oxygen gas
Fire hazards
Fumes from material on which work is done

Painting
Red lead paint

Cleaning metal surfaces and engine parts
1. Use of HCl and H_2SO_4 - principal hazard is to acid burns
2. Use of trichloroethylene - work is done outdoors. Hands protected by rubber gloves.

Pouring rudder stock bearings
Lead fumes hazardous in confined spaces

Grinding tools and equipment - fine dust produced

Heating with coke fires - CO produced

Machine shop work
Lubricating and cutting oils - Personal cleanliness emphasized

Tool case hardening
Use of potassium cyanide

Silver soldering - flux of boric acid and fluoride. No special consideration to ventilation for this work.

Carpenter shop -
1. Wood dust - ventilation considered inadequate

2. Rock wool - Fine particles imbed themselves in skin causing irritation and opening way for infection.

Pattern shop
1. Red lead paint for completed patterns
2. Wood alcohol in small quantities

Blacksmith shop
1. Lime for annealing (used with great care)
2. Potassium cyanide - tool hardening

Cleaning electric motors
Carbon tetrachloride - masks provided

Tight testing of tanks
Mercury used - mentions danger of ingestion by mouth

Babbitt operations
Lead exposure from melting of metals containing lead

Methods of protection from these hazards are not discussed in Mr. Obst's paper except in occasional brief statements.

MTN:ml:pac

U. S. Department of Labor
WOMEN'S BUREAU
Washington

COMMENTS ON EXPOSURES AND PREVENTIVE MEASURES

I. Welding

A recent epidemic of conjunctivitis affecting many shipyard workers emphasized the need of sterilization of goggles, respirators and any other personal protective equipment before issuing to other workers.

II. Exposures to lead in painting and in melting metal

Exposure to lead is hazardous to any worker but there is evidence that the effects are especially serious to women. The harmful effects of lead may seriously injure the offspring as well as the woman herself. Both engineering protection and close medical supervision are necessary. Any worker showing early signs of lead poisoning should be shifted promptly to other work. No worker below par in general health should be placed where lead is a possible hazard and no young woman under 21 or pregnant woman should be in such work.

III. Trichlorethylene exposure

Check should determine that concentration in the air is well under the maximum allowable limit of 200 particles per million cubic feet of air.

IV. Use of cutting oils

While personal cleanliness is of primary importance as stated, it is also important (1) to clean from the oil metal slivers and particles that will cause abrasions and open the way for dermatitis; (2) to provide clean wiping cloths; (3) to provide soaps and creams that will not only clean the skin but that will not defat the skin; (4) to transfer workers who show evidences of allergic reaction; (5) to analyze oil when skin infection occurs to ascertain whether other dermatitis producing material might be included in the oil, e.g., chlorine compound.

V. Carbon tetrachloride

Exposure may have serious effects on the liver and no pregnant woman should be exposed to it.

There is difference of opinion as to the maximum allowable concentration. Some authorities set the limit as low as 35 p.p.m., others as high as 100 p.p.m.

VI. Exposure to Fluorides

As Mr. Obst recognizes serious effects are known to result from exposure to fluorides and attention should be given to the extent of exposure in the soldering described and to methods of drawing off fumes.

VII. Exposure to mercury

Mercury is not only poisonous on ingestion by mouth as described in the paper, but vaporizes at ordinary temperatures and may be the cause of serious chronic poisoning. It is known to cause nervous difficulties, loss of teeth, and kidney ailments. A threshold limit for safe breathing of mercury vapor has been set at 0.1 to 0.2 milligrams per cubic meter of air.

VIII. Checking fumes

Routine check on the escapement of fumes is very important. Proof that concentration is well below allowable limits together with frequent medical check of exposed individuals is the best guarantee against poisoning.

IX. Ventilation

The enclosed paper by Mr. J. M. Thomson gives and interesting summary of some of the special problems of ventilation in shipbuilding.

MTM:pao

October 22, 1942

Miss Margot Sawyer
Todd Shipbuilding Company
1 Broadway
New York, New York

My dear Miss Sawyer:

In response to a request from Miss Ethel Erickson, I am sending you the following publications:

Women's Bureau Special Bul. 7, Hazards to Women Employed in War Plants on Abrasive-Wheel Jobs
Division of Labor Standards, Spec. Bul. 5, Control of Welding Hazards in Defense Industries

Also enclosed are several typewritten articles from our files which I believe will be of interest to you.

The only scientific study of the effect of the menstrual period on women's work was done by the British Industrial Health Research Board. Two Contributions to the Experimental Study of the Menstrual Cycle, and was included in Report No. 45 of the Board.

I have asked Dr. Louis Schwartz of the National Institute of Health, Bethesda, Maryland, to send you available information on dermatitis.

I have also requested the Office of War Information to send you a list of war government agencies and their fields of investigation, if such a list is available.

Sincerely yours,

Mary Anderson, Director

MTM:ld
Enclosures

October 22, 1942

Dr. Louis Schwartz
National Institute of Health
Bethesda, Maryland

Dear Dr. Schwartz:

Please send available information on industrial dermatoses to Miss Margot Sawyer, Todd Shipbuilding Company, 1 Broadway, New York City.

Sincerely yours,

Mary Anderson, Director

MFM:ld

Mrs. Mitchell:

Miss Margot Sawyer
asst to Mrs. Herrick
asked that the W.B.
send her:

1. Any information (additional to that in Hayward's bulletin - send her one of two copy of it) on handling of employees with mental difficulties - transfer, I&A and etc.
2. Any thing on demobilization " or approved literature - [illegible]
3. If possible a list of war govt agencies and any thing there with adoption comments.

this article fills
Investigation
U.S.

Send this or what ever you
can I

Miss Margot Sawyer
Todd Shipbuilding
1 Broadway
New York City

70
15
11
11
17

15-9-17.

368

October 12, 1942

Mrs. Elinore Herrick
Todd Shipyards Corporation
1 Broadway
New York City

Dear Mrs. Herrick:

I will be in your office on Thursday morning, if that will be convenient for you. I will be staying at the Commodore Hotel.

Sincerely yours,

Mary Anderson, Director

STANDARD FORM No. 14
APPROVED BY THE PRESIDENT
MARCH 10, 1926

TELEGRAM

OFFICIAL BUSINESS—GOVERNMENT RATES

FROM Labor Dept.

BUREAU Women's

CHG. APPROPRIATION Salaries and Expenses

U. S. GOVERNMENT PRINTING OFFICE 10—1723

Oct. 14, 1942

Mrs. Elinore M. Herrick
Todd Shipyards Corporation
1 Broadway
New York City

ERICKSON AND I WILL CALL AT YOUR OFFICE FRIDAY MORNING. GLAD TO HAVE LUNCH.

MARY ANDERSON

MA:IS

RECEIVED BY PRIVATE WIRE FROM
POSTAL TELEGRAPH
STANDARD TIME INDICATED IN THIS MESSAGE

Postal Telegraph [29]

Mackay Radio · Commercial Cables · Canadian Pacific Telegraphs

THIS IS A FULL RATE TELEGRAM, CABLEGRAM OR RADIOGRAM UNLESS OTHERWISE INDICATED BY SYMBOL IN THE PREAMBLE OR IN THE ADDRESS OF THE MESSAGE. SYMBOLS DESIGNATING SERVICE SELECTED ARE OUTLINED IN THE COMPANY'S TARIFFS ON HAND AT EACH OFFICE AND ON FILE WITH REGULATORY AUTHORITIES.

Form 16 PW

VLC100W 30=TBR NEWYORK NY 14 1112A 1942 OCT 14 AM 11 47

MISS MARY ANDERSON WOMENS DIVN=

:U S DEPT OF LABOR (WASHINGTON DC) (DC)=

EXPECTING YOU FRIDAY AND HOPE YOU CAN ARRANGE TO HAVE LUNCHEON WITH ME. I UNDERSTAND ETHEL ERICKSON IS IN TOWN NOW. WOULD IT BE POSSIBLE TO BRING HER WITH YOU?=

:ELINORE M HERRICK.

RECEIVED BY PRIVATE WIRE FROM
POSTAL TELEGRAPH
STANDARD TIME INDICATED IN THIS MESSAGE

Postal Telegraph (50)

Mackay Radio · Commercial Cables · Canadian Pacific Telegraphs

THIS IS A FULL RATE TELEGRAM, CABLEGRAM OR RADIOGRAM UNLESS OTHERWISE INDICATED BY SYMBOL IN THE PREAMBLE OR IN THE ADDRESS OF THE MESSAGE. SYMBOLS DESIGNATING SERVICE SELECTED ARE OUTLINED IN THE COMPANY'S TARIFFS ON HAND AT EACH OFFICE AND ON FILE WITH REGULATORY AUTHORITIES.

Form 16 PW

LB319W 12= TBR NEWYORK NY 3 1228P OCT 3 PM 1 05

MISS MARY ANDERSON WOMENS DIVN=

J S DEPT OF LABOR (WASHINGTON DC) (DC)=

:WILL COME TO YOUR OFFICE 9:30 WEDNESDAY MORNING OCTOBER SEVENTH

MANY THANKS=

:ELINORE M HERRICK.

9:30

STANDARD FORM No. 14
APPROVED BY THE PRESIDENT
MARCH 10, 1926

TELEGRAM

OFFICIAL BUSINESS—GOVERNMENT RATES

FROM ~~U. S. Dept. of Labor~~

BUREAU ~~Women's~~

CHG. APPROPRIATION ~~Salaries and Expenses~~

U. S. GOVERNMENT PRINTING OFFICE 10—1723

DAY LETTER

October 2, 1942

Mrs. Elinore Herrick
Todd Shipyards Corporation
~~Brooklyn, New York~~ Office 1 Broadway NYC

MISS ERICKSON MARGARET ANDERSON AND I WILL BE GLAD TO MEET WITH YOU ON OCTOBER SEVENTH. WILL YOU DESIGNATE PLACE AND TIME.

MARY ANDERSON

MA:IS

October 5, 1942

Room Clerk
Commodore Hotel
New York City

Dear Sir:

Will you please cancel the reservations requested October 3rd for Miss Margaret Anderson and myself on October 6th, as our plans have changed.

Sincerely yours,

Mary Anderson, Director

IS

NATIONAL LABOR RELATIONS BOARD

SECOND REGION
120 WALL STREET
NEW YORK, N. Y.

WOMEN'S BUREAU
SEP 3 1942
DEPARTMENT OF LABOR

September 2, 1942

Dear Mary Anderson:

I appreciate your note so very much, and many thanks for your good wishes.

As soon as I regain my voice - I have a bad case of laryngitis - I shall want to speak to those on your staff who made the survey of the West Coast. In fact you may be sure I shall be relying heavily upon you for information and assistance.

Am hoping to see you in the not too distant future!

Affectionately,

Elinor Herrick

Todd really wants to do the best job for women in the country & I shall need your help.

Miss Mary Anderson
U.S. Department of Labor
Washington, D.C.



lcep

October 7, 1942

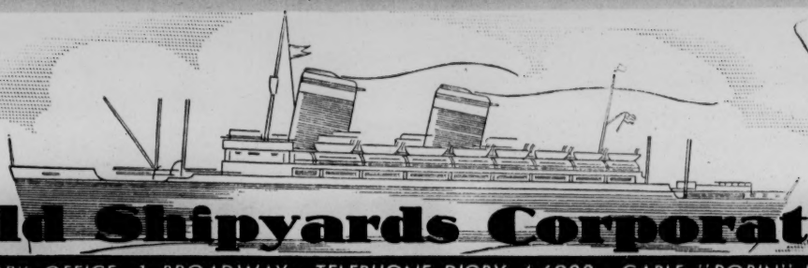
Room Clerk
Commodore Hotel
New York City

Dear Sir:

Will you please reserve for my use on October 15, a single room and bath at the minimum rate?

Sincerely yours,

Mary Anderson, Director



Todd Shipyards Corporation

NEW YORK OFFICE: 1 BROADWAY · TELEPHONE DIGBY 4-6900 · CABLE "ROBIN" NEW YORK

PLEASE ADDRESS YOUR REPLY TO

TODD SHIPYARDS CORPORATION
1 Broadway
New York, N.Y.
Digby 4-6900

TODD ERIE BASIN DRY DOCKS INC.
Foot of Dwight St.
Brooklyn, N. Y.
CUmberland 6-6820

TODD HOBOKEN DRY DOCKS INC.
Park Ave. & 17th St.
Hoboken, N. J.
HOboken 3-0700

TODD COMBUSTION EQUIPMENT, INC.
601 W. 26th St.
New York, N. Y.
BRyant 9-4725

TODD MOBILE DRY DOCKS INC.
Mobile, Ala.

TODD GALVESTON DRY DOCKS INC.
Galveston, Texas

HOUSTON SHIPBUILDING CORP.
Houston, Texas

SEATTLE-TACOMA SHIPBUILDING CORP.
Seattle & Tacoma, Wash.

TODD SEATTLE DRY DOCKS, INC.
Seattle, Wash.

SOUTH PORTLAND DRY DOCK AND REPAIR COMPANY
South Portland, Me.

Affiliated Companies

TODD-JOHNSON DRY DOCKS INC.
New Orleans, La.

TODD-BATH IRON SHIPBUILDING CORP.
South Portland, Me.

SOUTH PORTLAND SHIPBUILDING CORP.
South Portland, Me.

November 10, 1942

WOMEN'S BUREAU
NOV 11 1942
DEPARTMENT OF LABOR

"WE CONTRACT ONLY UPON THE FOLLOWING TERMS, APPLICABLE TO EVERY CONTRACT: IN THE CASE OF A VESSEL WE HAVE A LIEN UPON THE VESSEL FOR OUR BILLS; ALL TIME CONTRACTS ARE SUBJECT, WITHOUT RESPONSIBILITY ON OUR PART, TO DELAY IN CASE OF STRIKE, LABOR DIFFICULTIES, FIRE OR CAUSES BEYOND OUR CONTROL; OUR LIABILITY IN CASE OF DEFECTIVE WORKMANSHIP OR MATERIAL IS LIMITED STRICTLY TO THE PROPER REPLACEMENT THEREOF.
"FURTHERMORE, WE UNDERTAKE TO PERFORM WORK ON AND DRY DOCK VESSELS AND PROVIDE BERTH, WHARFAGE, TOWAGE AND OTHER SERVICE AND FACILITIES ONLY UPON CONDITION THAT WE SHALL NOT BE LIABLE IN RESPECT TO ANY ONE VESSEL, DIRECTLY OR INDIRECTLY IN CONTRACT, TORT OR OTHERWISE, TO ITS OWNERS, CHARTERERS OR UNDERWRITERS FOR ANY INJURY TO SUCH VESSEL, ITS CARGO, EQUIPMENT OR MOVABLE STORES, OR FOR ANY CONSEQUENCES THEREOF, UNLESS SUCH INJURY IS CAUSED BY OUR NEGLIGENCE OR THE NEGLIGENCE OF OUR EMPLOYEES AND IN NO EVENT SHALL OUR AGGREGATE LIABILITY TO ALL SUCH PARTIES IN INTEREST FOR DAMAGE SUSTAINED BY THEM, AS A RESULT OF SUCH INJURY, EXCEED THE SUM OF $300,000.00.
"IN CONNECTION WITH THE ACCIDENT AND/OR INDEMNITY AND/OR INSURANCE CLAUSES, IF ANY, CONTAINED IN YOUR SPECIFICATIONS, RELATING TO LIABILITY FOR PERSONAL INJURIES, PLEASE NOTE THAT WE DO NOT AGREE TO SAME, IN SO FAR AS THEY UNDERTAKE TO IMPOSE ANY LIABILITY OR ANY OBLIGATIONS TO TAKE OUT OR MAINTAIN INSURANCE BEYOND THE LIABILITIES OR THE OBLIGATIONS TO INSURE IMPOSED UPON US BY LAW."

Miss Mary Anderson, Director
Women's Bureau
U. S. Department of Labor
Washington, D. C.

Dear Miss Anderson:

Your letter came in Mrs. Herrick's absence and we are sending you eight copies of the memorandum, which is all we have. Sorry not to be able to give you the dozen requested.

Mrs. Herrick will return from Maine probably this coming Monday.

Sincerely yours,

Mildred L Dwyer

Secretary to
Mrs. Herrick

From:

Elinore M. Herrick

November 5, 1942

Mrs. Elinore M. Herrick
Todd Shipyards Corporation
1 Broadway
New York City

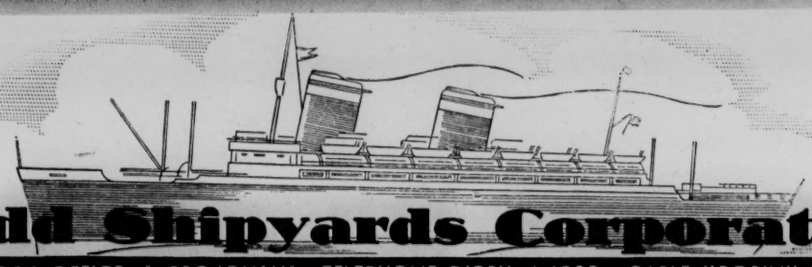
Dear Mrs. Herrick:

I have found your memorandum of our conference very helpful and instructive. I feel that our field agents should have a copy and we also ought to have a copy here in the office. I wonder if you can send me a dozen copies?

Sincerely yours,

Mary Anderson, Director

MA:IS



Todd Shipyards Corporation

NEW YORK OFFICE: 1 BROADWAY · TELEPHONE DIGBY 4-6900 · CABLE "ROBIN" NEW YORK

PLEASE ADDRESS YOUR REPLY TO

TODD SHIPYARDS CORPORATION
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Digby 4-6900

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Seattle, Wash.

SOUTH PORTLAND DRY DOCK AND REPAIR COMPANY
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New Orleans, La.

TODD-BATH IRON SHIPBUILDING CORP.
South Portland, Me.

SOUTH PORTLAND SHIPBUILDING CORP.
South Portland, Me.

November 4, 1942.

"WE CONTRACT ONLY UPON THE FOLLOWING TERMS, APPLICABLE TO EVERY CONTRACT: IN THE CASE OF A VESSEL WE HAVE A LIEN UPON THE VESSEL FOR OUR BILLS; ALL TIME CONTRACTS ARE SUBJECT, WITHOUT RESPONSIBILITY ON OUR PART, TO DELAY IN CASE OF STRIKE, LABOR DIFFICULTIES, FIRE OR CAUSES BEYOND OUR CONTROL; OUR LIABILITY IN CASE OF DEFECTIVE WORKMANSHIP OR MATERIAL IS LIMITED STRICTLY TO THE PROPER REPLACEMENT THEREOF.
"FURTHERMORE, WE UNDERTAKE TO PERFORM WORK ON AND DRY DOCK VESSELS AND PROVIDE BERTH, WHARFAGE, TOWAGE AND OTHER SERVICE AND FACILITIES ONLY UPON CONDITION THAT WE SHALL NOT BE LIABLE IN RESPECT TO ANY ONE VESSEL, DIRECTLY OR INDIRECTLY IN CONTRACT, TORT OR OTHERWISE, TO ITS OWNERS, CHARTERERS OR UNDERWRITERS FOR ANY INJURY TO SUCH VESSEL, ITS CARGO, EQUIPMENT OR MOVABLE STORES, OR FOR ANY CONSEQUENCES THEREOF, UNLESS SUCH INJURY IS CAUSED BY OUR NEGLIGENCE OR THE NEGLIGENCE OF OUR EMPLOYEES AND IN NO EVENT SHALL OUR AGGREGATE LIABILITY TO ALL SUCH PARTIES IN INTEREST FOR DAMAGE SUSTAINED BY THEM, AS A RESULT OF SUCH INJURY, EXCEED THE SUM OF $100,000.00.
"IN CONNECTION WITH THE ACCIDENT AND/OR INDEMNITY AND/OR INSURANCE CLAUSES, IF ANY, CONTAINED IN YOUR SPECIFICATIONS, RELATING TO LIABILITY FOR PERSONAL INJURIES, PLEASE NOTE THAT WE DO NOT AGREE TO SAME, IN SO FAR AS THEY UNDERTAKE TO IMPOSE ANY LIABILITY OR ANY OBLIGATIONS TO TAKE OUT OR MAINTAIN INSURANCE BEYOND THE LIABILITIES OR THE OBLIGATIONS TO INSURE IMPOSED UPON US BY LAW."

Miss Mary Anderson, Director,
Women's Bureau, U.S.Department of Labor

Miss Thelma McKelvey,Chief Women's
Labor Supply Service, War Production Board

Mr. Daniel Ring
U. S. Maritime Commission

Dear Miss Anderson,
Miss McKelvey, and
Mr. Ring:

I am enclosing our form of pre-employment physical examinations which was developed since you were here. It is just a mimeo at present until we have had more experience since we may want to change it.

Kind regards.

Sincerely,

Elinore M. Herrick

Elinore M. Herrick
Director of Personnel
and Labor Relations

Enclosure

TODD ERIE BASIN DRY DOCK ~~CORP.~~ Inc.

NAME_____ BADGE NO._____

ADDRESS_____ TEL. NO._____

AGE_____ DATE OF BIRTH_____ SINGLE, M. or DIV._____

FAMILY HISTORY_____

PAST HISTORY OF ILLNESS OR INJURY _____

HEIGHT_____ WEIGHT_____

PULSE_____ TEMPERATURE_____ BLOOD PRESSURE_____

GENERAL BUILD AND APPEARANCE_____ SKIN_____

MENTAL CONDITION_____

EYES JAEGER c RT_____ LT_____ VISION c RT_____ LT_____
JAEGER s RT_____ LT_____ VISION s RT_____ LT_____
PUPILS_____ SIZE_____ REACTION_____

NOSE_____ SINUSES_____

EARS_____ & _____ HEARING_____ LT_____ RT_____

THROAT_____ TONGUE_____ TONSILS_____ GUMS_____

TEETH_____ LU 87654321 12345678 RU
Missing Teeth_____
Nonvital Teeth_____
Periapical Disease_____
Marked Malocclusion_____
Lack of serviceable occlusion_____
Pyorrhea alveolaris_____
Teeth replaced by bridges_____
Meets dental requirements_____
Dentures_____ LL 87654321 12345678 RL

NECK_____ THYROID_____ GLANDS_____

MAMMARY MASSES_____

LUNGS_____ LT_____ _____ RT_____
X-RAY_____ DATE_____ RESULT_____ NO OF PLATE_____
COLDS_____ FREQUENCY_____

HEART_____ SIZE_____ SOUNDS _____

ABDOMEN_____

DIGESTIVE DISTURBANCES_____ CONSTIPATION_____

HERNIAE_____ HEMORRHOIDS_____ FISTULA_____

VARICOSITIES_____

JOINTS _____ ARTHRITIC CHANGES _____
SHOULDER _____ ELBOW _____ WRIST _____ HANDS _____ FINGERS _____
HIPS _____ KNEES _____ ANKLES _____ TOES _____
BACK _____ SPINE _____

PELVIS
CHILDBEARING _____
MENSTRUAL HISTORY _____ FREQUENCY _____ DURATION _____ PAIN _____
DISCHARGES _____

NERVOUS SYSTEM
REFLEXES _____ ABNORMALITIES _____

VACCINATION _____ SMALLPOX _____ TYPHOID _____

FATIGUE _____

SUMMARY OF DEFECTS _____

BLOOD EXAMINATION
HAEMOGLOBIN _____ RBC* _____ WBC _____ WASSERMAN or KLINE _____

URINALYSIS
Sp. Gr. _____ Alb. _____ Sugar _____ Microscopical _____

RECOMMENDATIONS _____

REMARKS _____

DATE _____ SIGNATURE _____

U. S. DEPARTMENT OF LABOR

WOMEN'S BUREAU

To—		From—	Re Attached Please—
	Anderson.		Approve
	~~Nienburg.~~		Comment
	Larrabee.		Note
	Benham.		Note and return
	Dern.		Reply
	Erickson.		Draft of reply
	Hyde.		Signature
	Manning.		Would like to discuss
	Mettert.		File
	Pidgeon.		Date
	Robinson.		Note:
	Smith, F.		
	Spring.		
	Stitt.		
	Files.		

OPO 16—24460

Please return to Sal per

DEPARTMENT OF LABOR

12/16

WOMEN'S BUREAU
DEC 16 1942
DEPARTMENT OF LABOR

~~Miss Hilkert~~

nd by the trial and error method,
cision concerning work clothes for

ell to the employees the clothing
t plus sales tax. However, if any
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rmy reject and reclaimed merchandise.

~~Please return to Miss Anderson~~

ring the khaki-colored coverall that
workers. These are not yet made in
rer is attempting to get some data

~~Thank you MJM~~

oes we purchased were unsatisfactory
, the soles too thin and the leather
xfords and it would have been neces-
girls preferred the high safety

No. 203

ore

ne girls to wear men's shoes, we had Dr. Sullivan consult Dr. Frd. Thompson, assistant orthopedic surgeon at St. Luke's Hospital, to determine whether the girls would suffer any ill effects. Dr. Thompson states that the girls feet will not be harmed if the shoes are large enough and properly fitted.

The attached list covers all of the clothing the girls are now using, indicating also the safety equipment which is issued to them.

E.M.H.

cc: Mr. Daniel S. Ring
Miss Mary Anderson
Mr. John Roach
Miss Constance Ekstrand
Miss Mildred Justice
Miss Margaret Sawyer
Mrs. Phyllis S. Fraser
Miss Thelma A. Older

FROM: Elinore M. Herrick

TO: Joseph Haag, Jr.

WOMEN'S BUREAU
DEC 16 1942
DEPARTMENT OF LABOR
DEC 15 1942

After much research and by the trial and error method, we have finally arrived at a decision concerning work clothes for our women workers.

It is our policy to sell to the employees the clothing through our Safety Store at cost plus sales tax. However, if any of the girls wear the khaki army pants and shirts, they buy these themselves at a store handling Army reject and reclaimed merchandise.

The girls are now wearing the khaki-colored coverall that has always been worn by our men workers. These are not yet made in women's sizes but the manufacturer is attempting to get some data on this.

The women's safety shoes we purchased were unsatisfactory because the heels were too high, the soles too thin and the leather too light-weight. These were oxfords and it would have been necessary to use leather spats. The girls preferred the high safety shoes worn by the men.

Before we allowed the girls to wear men's shoes, we had Dr. Sullivan consult Dr. Frd. Thompson, assistant orthopedic surgeon at St. Luke's Hospital, to determine whether the girls would suffer any ill effects. Dr. Thompson states that the girls feet will not be harmed if the shoes are large enough and properly fitted.

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Clothing Sold to Employes through Safety Store at Cost plus Sales Tax

Clothing	Price	
Crown-Headlight Khaki colored Coveralls (men's style)	$2.82	- At Brooklyn price is $3.25. Next shipment will be cheaper.
* Safety Shoes (men's style)	4.60	
Spats (used only with low shoes)	2.00	
Bandanna	.13	
Sweat Shirt	.80	
Wool Anklets	.44	
Welder's Coat (leather)	7.80	
Welder's Bib Overalls (leather)	9.50	
Gloves	.31	

Equipment issued by Safety Store on which a deposit is required. The deposit is refunded when the equipment is returned in good condition. If the equipment is not in good condition, it must be paid for. --

	Amount of Deposit	Cost
Goggles	$1.00	$1.60
Helmet	1.50	2.94
Goggles for Burners	1.00	2.40

Equipment issued in Safety Store on which no deposit is required but must be returned in good condition or paid for:

Skull Guard and Welding Shield	$4.65
Special Hat for Welders	3.25

At Hoboken no deposit is required on anything. The employee signs a loan slip and must return equipment in good order.

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* At Hoboken the girls buy these shoes at Thom McAnn Stores.

At Todd Erie Basin the girls are allowed to buy their Safety shoes outside, but must be approved by Safety Department.

Her New Job

Women and Warships

By Adelaide Kerr

Elinore Herrick is going to pioneer again in work which reflects a new trend. A trend of calling on women for bigger and tougher jobs because men think they can do them.

Seven years ago Mrs. Herrick became regional director of the National Labor Relations Board. It was an unusual job for a woman, for Mrs. Herrick had to sit as arbiter in some of the toughest disputes between capital and labor. Now she has resigned to hire and train women for the Todd Shipyards Corporation, which has 12 yards, and to be its director of labor relations. As far as she knows she will be the only woman in such a shipyard job.

"Mrs. Herrick's experience as regional director of the NLRB made her a natural for the job," a shipbuilding executive said. "But the company was glad she was a woman too. A man foreman knows how to handle men. He knows that Jack takes a few minutes out every day for a couple of quick smokes, and he knows that Jack works hard enough to make up for it. But he may not make allowances for similar feminine foibles. A woman will have a better understanding of women.

"There is nothing about a shipbuilding job that women can't do. They can't always do it to the same extent as men. Because of the physical strength required it may take two—or even five—women to do what one man did. But women could build a ship from keel to truck."

Mrs. Herrick, a big, dark-haired woman with an I-like-you smile and a friendly manner, will begin her recruiting and training program September 15.

"This is a wonderful opportunity for me and it didn't take me 2 seconds to say 'yes'," she said. "I can scarcely wait to get started.

"Women workers are going to be used in shipbuilding because there is a need for them. Some men are going to war and others are moving up to more highly skilled jobs. Women are being brought in to take their places. The women will begin at the same rate of pay as men, so they have got to be as good."

She dismissed with one wave of her hand a question concerning comments of a Western factory executive to the effect that many women factory workers are not "serious" and "flirt too much with men."

"When I was production supervisor of a mill in Old Hickory, Tenn., we had a mixed group of men and women—and we didn't have any trouble," she said. "Women lend themselves to factory discipline and organization as well as men."

Mrs. Herrick has been through the labor "mill" as an industrial worker herself. After her marriage at 21 and the birth of her two sons, she went to work in a Buffalo plant and later became production supervisor of the du-Pont Mill in Old Hickory. She quit in '27 to study economics and labor relations at Antioch College and ran a boarding house to support her family while she earned her degree.

Today she lives in a roomy apartment in a remodeled New York factory—and does all her own housework.



Wide World

ELINORE HERRICK

Dim-out Deadline Tonight . . . 7:57 p.m.

NEW YORK

U. S. Agency Takes Over Kaiser Hiring Here

USES Steps in As Workers Rush for Oregon Jobs

Henry Kaiser yesterday started to hire 20,000 New Yorkers for jobs in his West Coast shipyards, but today the United States Employment Service (USES) will take over the rest of the job.



Anna Rosenberg

Mrs. Anna Rosenberg, newly appointed regional head of the War Manpower Commission, announced the change late yesterday. Both she and Kaiser were in Washington when Kaiser's representatives opened shop in an old loft at 381 Fourth Ave. and began signing up workers at the rate of two-a-minute.

Mrs. Rosenberg pointed out that the hiring of many men created a number of problems which could be handled best by the USES.

The men, she said, must be hired in an orderly manner and, at the same time, New York City must not be drained of necessary skilled labor.

1200 Hired

After a slow start, Thomas Murphy, chief of Kaiser's hiring section, signed up 1200 men yesterday. Skilled and unskilled labor alike were signed to work contracts.

Murphy said:

"If a fellow knows one end of a monkey wrench from the other, he goes as a helper at 95 cents an hour. If he doesn't know one end from the other, we'll label the ends for him. We want men and we want them now."

While Mrs. Rosenberg had no comment on the Kaiser hiring technique, she made it plain that she would protect New York from being denuded of skilled labor. She set up a number of other hiring rules. These included:

¶ No one in draft classification 1-A will be hired.

¶ No one now engaged in war industry will be hired.

¶ No one who will come under the prospective 18-19-year draft will be hired.

¶ As much hiring as possible will be done through unions in New York, since Kaiser has had contracts with AFL craft unions.

¶ The USES must be assured of adequate housing for any men sent from here to the yards at Portland, Ore.

Most of these rules were laid down by Murphy, also.

Anticipating Contracts

A group of local officials pointed out that they anticipate that New York will require about 90,000 skilled mechanical workers here by the end of the year to work on war contracts. If all New York's skilled workers leave, then the war contracts, badly needed by the city, will follow the workers to other cities.

Apparently the substitution of USES for his own hiring service was satisfactory to Kaiser. The USES accepted in toto his present labor agreements which include:

¶ A 48-hour work week.

¶ No time-and-a-half for work between 40 and 48 hours.

¶ Wages of 88 cents an hour for laborers; 95 cents for helpers; $1 and up for skilled workmen.

¶ A 10 percent bonus for the swing-shift, working from 4:30 p.m. to 12:30 a.m.

¶ A 15 per cent bonus for the "MacArthur" shift, working from 12:30 a.m. to 8 a.m.

Kaiser has his own system within the yards which calls for:

¶ Units of 10 men working under a leader.

¶ Four leaders under one superintendent.

¶ Five superintendents under one foreman.

Workers' Living Schedules

Kaiser believes in rapid promotions and raises for his men. Murphy said that within six weeks these new men would be drawing journeymen's wages of $1.20 an hour, or lead men's wages of $1.43.

Murphy provided all applicants with a schedule of living costs, based on their living in a Kaiser-run dormitory and eating Kaiser-offered meals.

If workmen take advantage of these two offers, their costs will be $13.50 weekly; $10 is for food and $3.50 for living in a dormitory run by the firm if they double up.

In addition, a Federal Housing Project is being constructed which will house 21,000 families.

Kaiser is paying the cost of transportation of all men hired here—about $75—and will be repaid at the rate of $7.50 weekly.

Must Join Union

The men, too, will be required to join the appropriate AFL unions in the Kaiser plant. The initiation fee is $20 and must be paid within 20 days of going to work. With hiring being done through unions, most workers hired from now on will be members in good standing and won't have to pay the $20.

The no-overtime clause in the union contract is based on agreement between unions and management, permitted under the National Labor Relations Act. It does not conflict with any of the provisions of the Federal Wage-Hour Act.

The men hired yesterday were all signed to helpers' contracts. However, as soon as they report in Portland they will take certain tests which will determine their status.

A train already has been chartered to transport the men to Portland. It will leave New York on Friday and the men will be able to earn a half-day's wages on the day of their arrival.

Kaiser is hiring men throughout the country. In addition to New York, his recruiting staffs have set up, or intend to set up, offices in Indiana, Illinois and Texas.

OCCUPATIONS -

SHIPYARDS - 1943

Harper's Magazine
Sept. 1943

FROM HOUSEWIFE TO SHIPFITTER

VIRGINIA SNOW WILKINSON



In the early morning I made my way to the shipyards. It was exciting to rise at five-thirty while my family slept (although my husband and children had begged to be awakened) and to feel my way along the path to the car. For me, a housewife who had not held a job since that year's schoolteaching before marriage, this was adventure indeed. I was going down to the sea to build ships.

Over and over for months I had heard from the radio the call for women to enter war work. I had been delaying for one reason or another but I finally recognized these arguments in favor of my going to the shipyards: my children, now in their teens, were able to take some responsibility for our home; I wanted to help out the war effort more than I had been doing through a few voluntary services; and with living costs always going up and the children's education looming ahead, we could use the money. So I had taken the aptitude test at the U. S. Employment Office, had attended a defense class for shipfitters, and was now on my way to an actual job at Richmond.

It was still half dark when I reached the shipyards. The sky was a lovely gray with white behind it. All objects seemed to have been dipped in grayness; the buildings in the background, the arch over the entrance, reading "Kaiser Shipyards Co.," the great cranes, the checking booths were all gray like the sea beyond.

I was borne along by the crowd and permitted to enter through the guarded gate when I had shown my temporary pass. I stood in a long line to receive papers; I stood in another line to receive tool checks (for every tool borrowed, a chip from your stack). At last some sixty of us women were herded to a personnel building, where a young man addressed us on safety precautions, the woman counselor for the day shift advised us about our clothing, and then, after a tour of the yard, we were divided into the trades for which we had been employed. The names of the welders were called and responded to. An escort was assigned to take them to their locations. The burners were selected, the flangers, the chippers, the checkers. Only a sparse group remained to be grouped as shipfitters' helpers—six women besides myself, Negro and white. Again we started out en masse; this time to a little cottage which was labeled "Master Shipfitter." The man upon whom the cottage door opened was small and harassed. We were presented to him a little apologetically, I thought, by our guide.

"What have you got there?" the shipfitter asked.

"Just a few shipfitter helpers, Mr. Jepson."

"Oh, my God! Women shipfitters. Why do they treat me like this? Women shipfitters. How many?"

"Seven."

"I told you we couldn't use any more."

"Then why were we employed?" I couldn't help asking.

"Why? Lady, I ask myself that day in, day out. Say, tell me this, how many of you attended defense school?"

No one except me answered "Yes."

Mr. Jepson lifted and dropped his shoulders and hands in an exaggerated gesture of disgust.

"What did I tell you?" he said to the room at large. "We sign an agreement with the unions and the Maritime Commission *not* to employ anyone but those who have gone to defense schools and here's what we get—one who has been to school and six who haven't!" He rolled his eyes and shrugged. "You'll have to stay and help me place them. Take some over to Brown in the plate shop."

"I don't dare," our escort said. "I took him two yesterday when he didn't need them. He said if I ever brought him any more . . ."

"I know. I know. Well, call up Foster."

"That woman-hater!"

"Well, he can't go on refusing to have women. He's got to come around to it."

"All right," the young man replied and took up the telephone. "But what he'll say will hurt my eardrums. . . . Hello, Gilly, this is Frank for Jepson. We have some women shipfitter helpers here. How about—" He held the receiver a foot or two away, grinning at it.

Mr. Jepson smiled and sighed.

"Well, don't bother to phone. Just take two or three over to Steel and the rest down to the basins. *They've* gotta take 'em."

I rose in what I hoped was dignity.

"I've heard enough. We were urged to enlist in defense work; I was trained five weeks in school; I was employed by the Richmond Shipyards; I was cleared by the union; I was photographed, fingerprinted, and lectured, but no one hinted that we were not wanted. How do I check out?"

Mr. Jepson arose at once and came to me with soothing gestures.

"Now don't think we don't want you. We need you all right. It's just—" he shrugged and rolled his eyes—"so many of the men want—well, experienced shipfitters, men. You've had school. You'll get along. You go down to the basin with Frank, at least for the day until I can find a better place for you."

I saw no more of my fellow shipfitter helpers. I was sent to work on a nearly completed hull in one of the concrete basins—a hull which had been constructed up to its weather deck. I found myself on the rusty black steel more amazed than ever before.

I was assigned to a leaderman working high on the side of the ship.

"You come along with me, duchess. I'll teach you how to make scuppers. Come on."

To "come on" meant to clamber over the side of the ship until I felt the scaffolding beneath me. The simplest way seemed to be to jump from the deck to the scaffold, for I was not going to be caught lagging behind the men here where I was the only woman on the side of the hull. Sometimes a worker would extend a hand of assistance. I refused to see it. I jumped from deck to scaffold, catching myself by a clutch at a handy pipe; I squeezed to the outer edge of the support to allow another worker to pass; I ran along the scaffold planks. All this in abysmal ignorance of where I was. It was hours later, I think, when my leaderman, standing beside me, tossed a little piece of wood or rag overboard and I heard no sound from it as it fell or lighted. I looked over and down, and down, and then crept by inches back to the security of the hull's side. No soft billowy water lay beneath us, but a great depth of brutal concrete.

"Do people often fall off the scaffold?" I asked, shaking.

"Not often," my leaderman assured me. "Only once."

I did not allow the firm surface of the hull to get out of my clasp for the remainder of the afternoon, not, that is, until later, when a piece of red-hot steel just skinned between me and the hull I was clinging to. It landed at my feet still glowing. I looked up at the men above me, who were preoccupied with the burning of a hole.

"Never mind, darling," the leaderman soothed. "I think they saw you."

But later I heard him berating these same burners. "You let a red-hot clip fall within an inch of her—what the hell you trying to do?"

II

THE next day Mr. Jepson sent me out to an assembly way where I was entered upon the foreman's books as a shipfitter's helper. Here are made the double bottoms which hold water and oil for the ship's needs and for necessary ballast and, I suppose, give a second bottom when the first is missing. These units look much like the honeycomb of a wasp's nest—with the wasps still crawling about chipping, marking, and welding. They are built up off the ground about five feet on skids of heavy timber and iron.

I did not work that day. I met my new leaderman—certainly a nice, decent young man. I was introduced about the skids to sober men who did not call me "darlin' " or "duchess." I was told just to hang around and try to catch on. This catching on was not easy. I saw no one figuring out the weight of a piece of angle iron with several unknowns nor estimating what the freeboard would be in Sacramento and San Francisco if its dimensions were such and such and such, as we had had to do in school. I saw a few thoughtful men studying blueprints; a few shipfitters making chalk lines; a great many welders' arcs in the double-bottom units. But mainly I saw men trying to look not too bored with idleness—the newly employed pacing back and forth slowly, with misery in their eyes; the longer-employed, toughened and inured to idleness, who now could stand quite still and lean against a piece of steel with extreme endurance for hours, relieved only by frequent intervals of cigarette smoking. I perceived I could join either of these two groups, but as I did not smoke and as I had read somewhere that once a prisoner had begun to pace his cell he was lost to hope, I chose a way of my own. I talked with everyone I could about the work and his reaction to it and tried to understand the whys and wherefores of this gigantic affair.

I asked a pleasant-faced man who sat beside his burning machine how he liked his job.

"Oh, fine," he said, "when I have something to do. I like machine-burning [a method of cutting the steel by fire] but the only trouble is that there is so little of it to do on the skids. I cut that piece you see there this morning but I'll be lucky if there's another job this afternoon. And yesterday I didn't even get hooked up or light my flame all day."

I asked the girl welder who seemed to be indefinitely standing by.

"I *like* welding. But the waiting gets tiresome. There's so little to do."

"The welders in the double bottom seem to be very busy."

"Yes, but you see I've been assigned to this shipfitter as a tacker. He may not need me all day or only once or twice to tack a piece of steel but when he does I've got to be on hand, you see."

An old man in a long black coat and felt hat had paced slowly back and forth all morning, his face shut against the world. I found he had come recently from a Missouri farm, and the silence of his farm, I thought, had settled into his facial muscles, making him taciturn and solitary.

Another man with a jaunty large-brimmed hat was aching to talk.

"I'm from Minnesota and you can bet I'm going back there."

"After the war?"

"Long before that. They misrepresented things to us back there. They're right about the high wages, but you can't get a room anywhere and the price of food is terrible. My son was all ready to come with me, but I came first to get started while he stayed to sell what he could. I hadn't been here two days until I telegraphed him not to come. And as soon as I've stayed long enough to pay for my ticket here and back I'm leaving. I haven't done a lick since I came anyway."

Late in the afternoon a shipfitter asked me to hold the end of his chalk line while he squared a piece of steel. The next day a shipfitter and a flanger asked me to stand on a piece of steel while the flanger shoved and pounded it into place. That was my work for two days.

"Isn't there anything at all that I'm supposed to be doing or am equal to doing?" I put it to the foreman, man to man. "Why am I here?"

"Well, you're absorbing something of it and by the time we need you you'll know enough to help. Study the blueprints as much as you can."

"But isn't it expensive to pay me ninety-five cents an hour to stand around? How can we afford to build ships at such a cost?"

The foreman became calm and fatherly.

"You have to figure it this way: At no matter what the cost, we have to have these ships. In a way you might figure they are beyond all cost. If these troopships we're constructing make one safe trip across the ocean with troops and supplies they have served their purpose, have been worth their cost, whatever it is."

"But this doesn't preclude the fact that I should be useful or not employed. I admit I am very new but can't I be taught? If the shipfitters would just explain as they go along we'd soon be more useful. Everyone I've talked to wants to work."

"Well, you see this is a new field for us all here." He glanced round. "I daresay there isn't a single man here who builds ships in peacetime. We've come to it from all different fields. We're groping at something new but we're getting on our feet now. We've corrected the templates [patterns] and smoothed it all out. From now on we'll go faster and have more jobs for everyone. You just go on studying the blueprints. They're essential." And he patted my shoulder and turned away.

The young engineer whose job it is to supervise the units on the assemblies came by with a surprised but friendly look in his eyes.

"What are you doing here?" he asked.

"I ask myself that."

He shrugged and smiled. "I go around all day asking myself that. What *am* I doing here?"

"But you have a good job. I watch you go around casting a level critical eye down the units until you find one which displeases you. Then a lot of people go to work fixing it up."

"Yes, but there's not enough to it. It just takes an accurate eye."

I walked along the skids and bumped into a man in tan, apparently an engineer. We talked.

"Tell me," I asked, "Do you think I have misjudged my job? Do you think if I keep trying I can find something to do?"

"Let me tell you," he said. "I have degrees from four different universities. I helped build Singapore and Pearl Harbor. And *I* can't find a job for myself."

I took my problem to Mr. Jepson.

"Can't you find a job with something for me to do?" I asked him.

"You've got a job, haven't you?"

"You mean I've been employed. But I can't go on taking money for doing nothing. I've got to respect myself or leave."

"My God, all day long they come in here wanting me to find them a job with more to do. What do you think I am? I can't revolutionize the industry. What people don't understand is that this is shipfitting. You can't build ships the way you do other things." He spread out his arms. "There are times while the work is getting laid out when few people are needed but then, after it shapes up, everyone around, and more, can be thrown on it. There just has to be a period of lull. If this were a peacetime activity the boss would be around with more work than anyone could do, shouting, 'Get the hell on to the job.' But by God, woman, this is war. What can you expect?"

Later my foreman, answering the same inquiry, said, "The management does employ more men and women than it can put to work at once but they are here on hand, taking on new experience, learning new terminology—port, starboard, bulkhead, and vertical keel. Some will drop out but eventually the others will be drawn in on the job. Some of those will be no good. The others will build ships. You've got to have a lot of people to draw from in order to get even some good workmen. They shake the basket after a while and the capable come to the top."

"And the women?" I asked.

"And the women too have got to be used. The men don't like the idea; they voted against it in their unions; but they'll get used to women in time and think nothing of it. They used to feel the same way about women in the plate shop, but it's full of women now—they run the show—and there's no real hostility there toward them any more. Women haven't been

seen much on ships yet but they'll be seen as the war goes on."

I was glad he mentioned the war. I had been wondering whether it was because there were no radio news reports here that no one spoke of the war, that great events shaping outside were diminished and pushed back from the consciousness of men. Was it because there were no clocks—for never a one could you find in the yard—that there seemed to be so little realization of the time that was so late? It was hard indeed to remember the urgency of the voices on the air, my own struggle against a sense of guilt and conscience, and the compulsion that had finally brought me to this job I was not doing. Should I leave? I remembered my husband's and children's absurd pride in my being here and decided to give myself two months to find something real to do.

Within a week I had something of a job. I marked with yellow paint all the little places on the double bottom where the welders must put their intermittent weld. It was a sizable job which kept me busy all day in the double bottoms. I worked with flangers, with welders, with burners, with pipefitters, and heaven help me, with chippers. ("Chipper" is a mild understatement of a name for a man who grinds his way through steel with a drill or electric chisel which is as nerve-splintering as a dentist's drill multiplied by a hundred. They seem to be nerveless and quite unconscious of the edginess they produce in others.) The engineer told me very gently about the great art of marking for a welder—never less than three inches and so much from center to center, to be gaged by the naked eye. The foreman of the welders happened upon the scene and told me not quite so sweetly but succinctly what to do and what not to do. The engineer disagreed with the welder; the welder corrected the engineer; and the conversation descended into a you-do-not-you-do-too sort of discussion. But they worked their way out of the unit with it and over to the office, and I took what seemed the best of both their arguments and made my yellow markings for the welders. I worked so diligently that I failed to hear the four-thirty quitting whistle.

When I came out of the unit with my paintbrush and can the day shift was gone and the swing shift was on. This was interesting, for I had wanted to see this shift for some time. On the "day" they were always saying "that damn swing shift" when they weren't saying "that damn graveyard shift." It was frequently said that all that we, the day, did was undo what the other shifts had done wrong the night before. Therefore I was curious to see this group of people. They seemed quite normal, I thought, except that they continually stared at me as though I were a creature from another planetary system. I had to explain that I was a tag-end of the day shift. At that their wonder seemed to grow. "She belongs to the day shift" they repeated and shook their heads until I felt conspicuous and hurried away with yellow paint on my face.

III

Two days later I was still workless though. Oh, I went after some paint, later on some prints, I painted a few letters on the steel, I studied the blueprints, and once in a while I held the end of a chalk line. But most of the time I sought work. I had learned that foremen and leadermen do not enjoy your asking for work. It's embarrassing. They begin to get a harassed and haunted look. On my own initiative I labeled a few sections, numbered the frame lines of a unit, perceived no paint and went after it, made a few punch holes where needed, and simulated such activity that I had two women looking envious.

"May I help you?" one of them asked wistfully. I let her paint for a time while I learned about her. She had a husband and a son working in various shipyards of the bay area and no home but a garage. "I refused point-blank to stay home and keep house in a garage. So I came to work. It would be all right if they'd only let you work at anything. It's standing around all day that is so hard. And it makes my son furious to hear of this idleness. He really works hard where he is and he thinks it gives all shipyards a bad name to hear what I tell him."

The other woman who watched me had

been seven months in the shipyards, the first six of which she had been in the office, where she was responsible for the work of eight women. "By the time I got them enough to do there was nothing left for me. I decided to get outdoors where I could surely have more to do building ships." She shrugged. "But it's pretty much the same everywhere in the shipyards—not enough to do. It's all right for some people, who like something soft, but if you really want to work it's awful. My husband got a leave of absence from his civil service position to work with me but he couldn't stand it more than a few weeks."

By this time I had come to the end of my self-created jobs. I went back to my leaderman.

"I've kept out of your way for two and a half hours; I've been round and round the skids and I can find nothing else to do. I'm afraid it's up to you now."

His face lit up with an inspiration.

"Take that cut over to First Aid," he said.

"Must I?" I began, but then I saw it was his last resource. It would keep me busy going and coming.

I had seen very little of First Aid. I had bought the insurance offered for fifty cents a week. I had seen the quiet coming and going of the ambulance as it was en route to and from the scene of accident. Someone might mention with a word or a gesture of his thumb that the ambulance was going by but there would be no herald of its movement in the yard. "Another one for Basin Three." A piece of steel would drop on someone's feet and sever them from his body, but there would be no outcry or fuss above the tumult of the assemblies. Or a man would fall and the ambulance would come silently and quickly, and as silently and quickly remove all traces of the tragedy, with no work stopped, few words said, no fuss made. In this, it seemed to me, the yard was particularly efficient.

The First-Aid building was a charming cottage, all white and gray and cool cleanliness. A line of human beings waited here as elsewhere in the yard. I joined the line.

I recognized a woman welder in front of me. She was there for a hoarse cold.

"Those awful double bottoms," she said. "You get a cold in there and it hangs on for weeks."

"Aside from that, how do you like your job?"

"Well, some days I think I can't stand another day of it. Nothing seems worth the dirt and fumes and awful noise of those chippers. And then the next day it doesn't seem so bad and I go on."

The nurses and office attendants of First Aid are one group in the yard who are busy to a nerve-straining degree. As fast as they can ask or answer questions, or make notes, or hand out aspirin or nose-drops, they attend to the clients.

Our attention was attracted by men in the row farther down. One man had stepped a little out of his straight line to talk to some acquaintance. A tall Negro stepped into his place. The white man did not speak before he swung a mighty fist at the Negro's face and brought him down unconscious. He brushed his arms off and looked about him. "This was my place," he said and stepped into it over the prone body of the Negro. His complacency seemed not to be touched by the fact that he had given the Negro a boost over himself and all the others into the inner sanctum of First Aid while he himself must wait in a line held up that much longer while they were caring for an unconscious man. No Negro was going to step in front of him.

During those days of enforced idleness I used to amuse myself by picking out those who were really working. I was surprised to count how many there were who were actually coming to grips with a job and seriously, soberly working it out without hurry but with no waste motion either. Shipfitters, flangers, welders, burners, pipefitters, and chippers, experienced and wise in their calling, seemed conscious of the need for ships and were building them. The inexperienced like myself looked on. And not only the inexperienced. The leadermen of the various crafts seemed to find work irreconcilable with dignity. (Surely I've never seen any dignity like the dignity of a welder, burner, or chipper leaderman.) This fine stillness in some may have made

me unjust toward the class, but splendor does shine into the eyes at times and distort the view of the whole. Yet with these exceptions it seemed to me that people wanted to work. Denied self-respecting work, they grew lazy and cynical, or jealous of those who by luck or strategy had something to do. When there was a good piece of layout work—the favorite job of shipfitters, it would seem—we all pounced upon it like birds of prey and finished it up in no time. This was simply uncontrolled greed and we knew it. Sometimes two helpers, given a job and knowing it would be the only job for them that day, decided they would be thrifty and sparing of it to make it last all day. Or a job within one man's capacity might in the spirit of co-operation be made to do for two or three, as when Alice and Pop and I snapped work lines one afternoon—a job any one of us might have completed in the same time. ("Don't hurry now or we'll be standing around looking at ourselves again.")

There was some evidence that quartermasters, engineers, and superintendents realized this unhappy situation. It was drawn to their attention often enough. ("Why do they hire us?" "Because some day you'll be useful.") They must have dreamed at night of a scheme that would call for each assembly to employ all those who waited on its periphery in idleness. They even appointed intelligent-looking co-ordinators to figure out how everyone could be put to work—and then the co-ordinators would go all about the skids, thoughtful and wistful, trying to find a job for themselves.

IV

It must have been a fortnight or so later that I was given my first real shipfitting job. (Painting for welders is hardly that.) I was taught to put chocks on the double bottom. Chocks act as supports when the unit is turned over and put into the waiting hull. For weeks the craftsmen of our skids had worked on a huge section of double bottom, labeled XAK, which was at last passed as finished. It was prepared by the riggers to be lifted by the cranes—and then the whistle blew and we all went home. In the morning we learned that while the cranes were lifting the sixty tons—on the graveyard shift, mind you—the great weight suddenly broke loose and dropped, breaking a crane, smashing the roadway and concrete walk, and quite ruining the unit itself.

If the work in the basin on Hull 6 was not to be held up we had to rush a new XAK to replace the other. All hands were thrown upon it—even my hands. I was told to locate the chocks on the blueprint, to measure for them, to find the chocks, to get a welder to put them on, and to check to see that they were square.

It was nice to be a part of the co-operative spirit that was humming over this great smoking honeycomb. Men crawled in and out as furiously busy as wasps. I went my way blithely, saying "Ah-h-h" to myself. When it came to getting a welder, why, I knew welders. They were clothed in brown leather and wore black helmets. Dozens of them were about. I approached one of them.

"Would you please weld these chocks on, over here? They are in a hurry for the unit."

The welder looked at the project and drew back coldly.

"That's a job for a tacker," he said.

"It's welding, isn't it?"

"Tacking is a temporary weld. You'll have to get a tacker."

I went up to the next brown-leathered man.

"I haven't my hose over on this side. It would be too much trouble to haul it over for just those few chocks."

I approached another welder, who tried to crush me with a look.

"I'm a welder, not a tacker."

I selected next a tall masterly-looking man of much dignity.

"There are a few chocks which must be tacked in unit XAK. Can you do it? The unit is supposed to go right away."

Heavens, what had I done now? This man looked at me, just looked at me, while he blew out the cigarette smoke from his mouth. Slowly, quietly he spoke these few concentrated words:

"I am a tacker leaderman."

I wondered if I was supposed to back away bowing.

This was getting me nowhere. And this was my job. I looked about the skids until I recognized a welding foreman. I took my case to him. More experienced now, I did not ask him to weld but only to obtain a welder-tacker for me. He produced a very young boy whom I led to my chocks. I made them square and on my lines before he welded. When he finished they were neither square nor on my lines. They had to be broken off and rewelded. They were not his responsibility. But I felt sorry for him—not so many years older than my children, and earning ninety-five cents an hour before he had lived long enough to know what that meant or the importance of the education he was not getting. When he had welded three or four chocks he stood up with his eyes wandering all over the skids and murmured something about not being able to do any more because he ought to be with another crew and besides, he didn't think his hose would reach much farther.

Then I looked about the assembly myself. I found a tall young woman standing with her tools and hose with that baffled look of the newly idle. I approached her.

"I don't know whether you're a tacker or a welder or a helper or a trainee or a journeyman, but there are a few chocks which must be welded to unit XAK before it is picked up by the riggers. Do you think you can do it?"

"You bet I can. I'd love to," she said and was on her way at once. "I haven't done a thing all day." I was surprised how quickly and efficiently she gathered her paraphernalia and stooped over the job. When she raised her helmet the chocks were on the lines and square. She was interested to know where they should go and she took the responsibility for their being there when she had finished. "You shouldn't hold them or look at them," she told me. "You might burn your arm or get a flash. I'll hold them to the mark." After she had finished she told me that this was her second day out of welding school. "My husband was called into the Army and I went into welding school. If there's anything I can do to help build ships I'm going to do it."

I could well believe what was so frequently said in the Yard: that women make fine welders.

A few mornings later, as soon as we stepped upon the skids, we perceived that something new was astir. The shipfitting women—there were three of us—were called together.

"We're going to give you your own unit to work on together," the leaderman said. "XAK is your baby now. Study your print, square your frame lines down the vertical keel, and get the crane to bring you your steel."

Alice, our naïve nineteen-year-old, glowed. "Golly," she said. "Really?" The colored girl was more sophisticated but we were all pleased.

"Let's be so accurate and careful that they won't be able to find a thing wrong. Let's check and recheck everything. . . ." "We'll work it out together. If one of us makes a mistake we'll tell her and correct it and no bad feelings. . . ." "We'll all stand and fall together on it." That was the way we talked.

I never saw such a change in three workmen as in these three girls. We became integrated persons working together on a project which focused all our interests. I noticed how quickly we ran our own errands, how conscientious we were in checking, how we abhorred sloppy measurements. For once we had been given responsibility, for once we had been put on our own, for once we had enough to do.

"When we finish we'll hold open house and invite you in to tea," we told our leaderman.

Our enjoyment was such that we did not notice that something was amiss until late in the afternoon. Then we became gradually aware of the hostility of the men. Our woman burner reported that they were "seething with resentment" that women should be given a unit to construct. The women checkers said, "You should just hear what we hear outside our checking shed, my dears." This was the first time I had come up against the hostility of one sex toward another and I could not believe it. The men had always been so decent, so respectful, so kindly. But this was the first time that we

had been seen in the light of competitors. We had been amusing little creatures only too happy to take what crumbs of jobs were dropped to us.

Our leaderman said, "I know, but pay no attention. They'll have to get used to women shipfitters. Half these men may be in the Army this January. They might as well accept the fact that women will have to take their places."

Our woman checker said, "In September I was one of the first women ever to be admitted out here in the yards. You could have cut the resentment with a knife and spread it thick. But it's gradually being worn away."

The next day, with no explanation, our XAK, "our baby," was taken from us and given to the men. We had to stand aside and see the men working on what we felt was our project. Cora, whose boy friend was one of the group, said the men were afraid the assemblies would become like the plate shop—overrun by women. She took herself over to the unit where her friend was working, to lean against the steel. Alice took out her lipstick: "Oh, what the heck do I care so long as I get my dollar five an hour. But it *was* fun."

I tried to reflect that there must be another side to this thing. Maybe the men who were heads of families, straining to take care of several dependents, and who had known the bitter struggle for a living—maybe these men resented the fact that any eighteen-year-old could come out without a day's training, without a grain of tool sense or mechanical sense, and draw the same pay as they and rise at the same rate—even these girls who would go at once into debt for fur coats and "perfectly adorable" evening gowns. The pay was too high for the beginner, I knew—for the boy who had quit high school as well as for the girl. The experienced workman might easily feel resentment. But this I knew too: that the responsibility placed upon these girls had made them almost in one day into serious workmen.

V

One night I had an adventure. It concerned my getting home. Tired of having my hammer stolen so many times, I had brought a cheap little hammer from home and kept it in a little leather holder on my belt (a Christmas gift from my son). Now as I was going out the gate, a little late, I was held up by a guard.

"Sorry, lady, you can't go out with that hammer. Step back."

"This?" I asked and brought the hammer forth. "But it is my own from home."

"Sorry, but you'll have to go to the police station."

"Where is the police station?"

He gave me the direction with his thumb.

"But I'll miss my last bus."

"There'll be others later on."

"Not for fifty or sixty minutes later on, and then perhaps not in my direction."

At the police station: "You can't go home with that."

"It's my own."

"But you can't go out the gate with it."

"I have for two weeks."

"You can't any more."

"Will you check it for me then and let me catch my bus?"

"No. You'll have to go all the way back to the plate shop and let them release it."

"That is blocks and blocks back. The plate shop has nothing to do with this—they've never seen it. Can't I leave it with you and go out the gate?"

"No."

"But you'll have the hammer."

"We don't want the hammer."

"Do you mean to say you are going to keep me here for a twenty-five-cent hammer, without a warrant?" I looked at the three uniformed policemen, at the heavy galvanized fencing, at the guarded gate, and shook myself. This was like some movie I had seen of Nazi Germany.

"I insist upon seeing the American Consul." But they didn't smile. "May I use the phone then?"

"No."

By this time I had a splitting headache; I was furious; I was longing to reach my husband and have him come in true movie fashion to the rescue. Outside the station I put my little hammer in an ashcan near by and approached the gate. The guard stood stiffly and stoutly before me.

"Where's your release?"

"I haven't one but I haven't a hammer either—see?" and I showed him.

"You'll stay here all night then."

I turned and began my furious walk to the plate shop. Often in the yard I had seen people pushed round and marveled with a little disgust that Americans would take it. I had often seen utter disregard for individual liberty and great injustice done to employees, and had noticed that it was taken with pained resignation by some, and by others with apathy, with whining complaint, or with "My God, someone is going to hear of this!" But for the Resigned, the Apathetic, the Plaintive, the Angry the situation remained unchanged. Now I understood.

The plate shop seemed puzzled by my request; it was evident they had not often had to meet such a demand. The tool checkers looked at my puny hammer; they looked at me; they shook their heads, for I was a suspect character. Finally a checker brought a man in charge who produced, after a time, a form which stated that the tool chest which this workman was carrying out of the yard contained no plate-shop tools. The employee at his elbow said, "For a two-bit hammer, my God!" I walked the blocks back to the gate, noting when I arrived that all busses had disappeared.

I presented my piece of paper to the guard, who stepped aside and allowed me to pass. I clicked my heels and saluted. "Heil," I said. But he did not smile or speak, for he was a serious man and I had tried him greatly. I now realized I worked for something Big. I was deeply impressed all the way home.

VI

I HAD promised myself two months in which to find myself here in the shipyards but my probation was not to last so long. It seemed that we, the women, were being assimilated gradually, if slowly. For a while we had floated on top, undissolved, but the broth was big enough with a little stirring and stewing to absorb us all —or almost all. The great need was for experienced workmen, men or women; and time on the job, doing this and a little of that, adds up finally to experience. I was given more and more to do. (When I told my leaderman that I liked having more to do he answered, "Well, neither you nor I nor the shipyards are as new and green as we were; we're all getting under way.") Six weeks from the date of my arrival at the yard I was given a unit to handle by myself. I guess it was not so much but it was my own.

I measured for and located the steel material which was to go on this unit. I labeled it with chalk and engaged the riggers to lift it. I asked a flanger and a tacker to be on hand to put the steel in place and to tack (weld) it up. And then I stood while the crane—one of those beautiful gray cranes which trail steel through the air with a motion as graceful as the soaring of a hawk on an upcurrent of air—picked up the material and sped it to our unit. It wasn't so much, no more than anyone could have done, but I felt the keen exhilaration of getting under way. It was good, I thought, this working together on a ship.

Standing so elated, I felt a ripple of interest run from workman to workman. We all looked up and out to sea where a gray troopship was being towed past us silently. Our ship. My first day in the yard I had helped make a scupper for it and these other men and women standing grinning had made the double bottom.

"There she goes!" we said and watched it as it slipped away. Then I turned back to my work, for at last I had a job.

June 30, 1943.

Miss Margaret Sawyer
Todd Shipyards Corporation
1 Broadway
New York, N. Y.

My dear Miss Sawyer:

Mrs. Herrick's secretary asks us to get in touch with you concerning the proposed visit of two members of our staff to the Todd-Erie Basin Drydocks.

As you probably know, Mrs. Marie Wright and other members of our staff have been conferring with shipyards in various sections of the country concerning the employment of women. We have left the New York District to the last in order that the results of a well-planned-out program for the employment of women might be compared with the lack of any planning in so many yards.

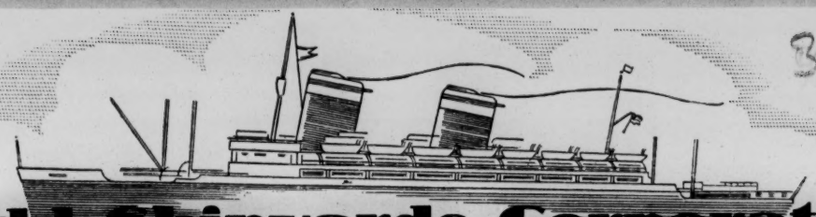
Mrs. Wright and Mrs. Newman will call on you on July 6, and we hope they may have the opportunity to become fully familiar with the work women are doing and the conditions under which it is being done, under your guidance.

Very truly yours,

Mary Anderson, Director

MA:RMN:cam

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Todd Shipyards Corporation

NEW YORK OFFICE: 1 BROADWAY · TELEPHONE DIGBY 4-6900 · CABLE "ROBIN" NEW YORK

PLEASE ADDRESS YOUR REPLY TO

TODD SHIPYARDS CORPORATION
1 Broadway
New York, N.Y.
Digby 4-6900

TODD ERIE BASIN DRY DOCKS INC.
Foot of Dwight St.
Brooklyn, N. Y.
CUmberland 6-6820

TODD HOBOKEN DRY DOCKS INC.
Park Ave. & 17th St.
Hoboken, N. J.
HOboken 3-0700

TODD COMBUSTION EQUIPMENT, INC.
601 W. 26th St.
New York, N. Y.
BRyant 9-4725

TODD MOBILE DRY DOCKS INC.
Mobile, Ala.

TODD GALVESTON DRY DOCKS INC.
Galveston, Texas

HOUSTON SHIPBUILDING CORP.
Houston, Texas

SEATTLE-TACOMA SHIPBUILDING CORP.
Seattle & Tacoma, Wash.

TODD SEATTLE DRY DOCKS, INC.
Seattle, Wash.

SOUTH PORTLAND DRY DOCK AND REPAIR COMPANY
South Portland, Me.

Affiliated Companies

TODD-JOHNSON DRY DOCKS INC.
New Orleans, La.

TODD-BATH IRON SHIPBUILDING CORP.
South Portland, Me.

SOUTH PORTLAND SHIPBUILDING CORP.
South Portland, Me.

WOMEN'S BUREAU
JUN 30 1943
DEPARTMENT OF LABOR

June 28, 1943

OUR CONTRACT ONLY UPON THE FOLLOWING TERMS, APPLICABLE TO EVERY CONTRACT: IN THE CASE OF A VESSEL WE HAVE A LIEN UPON THE VESSEL FOR OUR BILLS; ALL TIME CONTRACTS ARE SUBJECT, WITHOUT RESPONSIBILITY ON OUR PART, TO DELAY IN CASE OF STRIKE, LABOR DIFFICULTIES, FIRE OR CAUSES BEYOND OUR CONTROL; OUR LIABILITY IN CASE OF DEFECTIVE WORKMANSHIP OR MATERIAL IS LIMITED STRICTLY TO THE PROPER REPLACEMENT THEREOF.

"FURTHERMORE, WE UNDERTAKE TO PERFORM WORK ON AND DRY DOCK VESSELS AND PROVIDE BERTH, WHARFAGE, TOWAGE AND OTHER SERVICE AND FACILITIES ONLY UPON CONDITION THAT WE SHALL NOT BE LIABLE IN RESPECT TO ANY ONE VESSEL, DIRECTLY OR INDIRECTLY IN CONTRACT, TORT OR OTHERWISE, TO ITS OWNERS, CHARTERERS OR UNDERWRITERS FOR ANY INJURY TO SUCH VESSEL, ITS CARGO, EQUIPMENT OR MOVABLE STORES, OR FOR ANY CONSEQUENCES THEREOF, UNLESS SUCH INJURY IS CAUSED BY OUR NEGLIGENCE OR THE NEGLIGENCE OF OUR EMPLOYEES AND IN NO EVENT SHALL OUR AGGREGATE LIABILITY TO ALL SUCH PARTIES IN INTEREST FOR DAMAGE SUSTAINED BY THEM, AS A RESULT OF SUCH INJURY, EXCEED THE SUM OF $300,000.00.

"IN CONNECTION WITH THE ACCIDENT AND/OR INDEMNITY AND/OR INSURANCE CLAUSES, IF ANY, CONTAINED IN YOUR SPECIFICATIONS, RELATING TO LIABILITY FOR PERSONAL INJURIES, PLEASE NOTE THAT WE DO NOT AGREE TO SAME. IN SO FAR AS THEY UNDERTAKE TO IMPOSE ANY LIABILITY OR ANY OBLIGATIONS TO TAKE OUT OR MAINTAIN INSURANCE BEYOND THE LIABILITIES OR THE OBLIGATIONS TO INSURE IMPOSED UPON US BY LAW."

Miss Mary Anderson,
Director, Women's Bureau
U.S.Department of Labor
Washington, D.C.

Dear Miss Anderson:

This will acknowledge your letter of June 25th to Mrs. Herrick. Since Mrs. Herrick is presently in Portland, Maine, I would suggest that your representative contact Miss Margaret Sawyer, Assistant to Mrs. Herrick, when she is in New York.

With kind regards.

Sincerely yours,

Mildred L. Dwyer

Secretary to
Mrs. Elinore M. Herrick

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June 29, 1943

Dr. Margaret N. Sullivan
Todd Shipyards Corporation
Todd Erie Basin Dry Docks, Inc.
Foot of Dwight Street
Brooklyn, N. Y.

My dear Dr. Sullivan:

I am sending you copies of the Women's Bureau Bulletins relating to legislation governing the employment of women in industry.

Sincerely yours,

Mary Anderson, Director

Inclosures



Todd Shipyards Corporation

NEW YORK OFFICE: 1 BROADWAY · TELEPHONE DIGBY 4-6900 · CABLE "ROBIN" NEW YORK

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SHIPBUILDING CORP.
Seattle & Tacoma, Wash.

TODD SEATTLE
DRY DOCKS, INC.
Seattle, Wash.

SOUTH PORTLAND
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TODD-BATH IRON
SHIPBUILDING CORP.
South Portland, Me.

SOUTH PORTLAND
SHIPBUILDING CORP.
South Portland, Me.

WOMEN'S BUREAU
JUN 25 1943
DEPARTMENT OF LABOR

June 21, 1943

"WE CONTRACT ONLY UPON THE FOLLOWING TERMS, APPLICABLE TO EVERY CONTRACT: IN THE CASE OF A VESSEL WE HAVE A LIEN UPON THE VESSEL FOR OUR BILLS; ALL TIME CONTRACTS ARE SUBJECT, WITHOUT RESPONSIBILITY ON OUR PART, TO DELAY IN CASE OF STRIKE, LABOR DIFFICULTIES, FIRE OR CAUSES BEYOND OUR CONTROL; OUR LIABILITY IN CASE OF DEFECTIVE WORKMANSHIP OR MATERIAL IS LIMITED STRICTLY TO THE PROPER REPLACEMENT THEREOF.
"FURTHERMORE, WE UNDERTAKE TO PERFORM WORK ON AND DRY DOCK VESSELS AND PROVIDE BERTH, WHARFAGE, TOWAGE AND OTHER SERVICE AND FACILITIES ONLY UPON CONDITION THAT WE SHALL NOT BE LIABLE IN RESPECT TO ANY ONE VESSEL, DIRECTLY OR INDIRECTLY IN CONTRACT, TORT OR OTHERWISE, TO ITS OWNERS, CHARTERERS OR UNDERWRITERS FOR ANY INJURY TO SUCH VESSEL, ITS CARGO, EQUIPMENT OR MOVABLE STORES, OR FOR ANY CONSEQUENCES THEREOF, UNLESS SUCH INJURY IS CAUSED BY OUR NEGLIGENCE OR THE NEGLIGENCE OF OUR EMPLOYEES AND IN NO EVENT SHALL OUR AGGREGATE LIABILITY TO ALL SUCH PARTIES IN INTEREST FOR DAMAGE SUSTAINED BY THEM, AS A RESULT OF SUCH INJURY, EXCEED THE SUM OF $300,000.00.
"IN CONNECTION WITH THE ACCIDENT AND/OR INDEMNITY AND/OR INSURANCE CLAUSES, IF ANY, CONTAINED IN YOUR SPECIFICATIONS, RELATING TO LIABILITY FOR PERSONAL INJURIES, PLEASE NOTE THAT WE DO NOT AGREE TO SAME. IN SO FAR AS THEY UNDERTAKE TO IMPOSE ANY LIABILITY OR ANY OBLIGATIONS TO TAKE OUT OR MAINTAIN INSURANCE BEYOND THE LIABILITIES OR THE OBLIGATIONS TO INSURE IMPOSED UPON US BY LAW."

RECEIVED
OFFICE OF SECRETARY OF LABOR
JUN 22 1943
AM 9|10|11|12|1|2|3|4|5|6 PM

Director of Labor Relations
Department of Labor
Washington, D.C.

ATT: Commissioner of Labor

Dear Sir:

Please forward to me a copy of legislations governing women in industry.

Thanking you for your courtesy, I am

Very truly yours,

Margaret N. Sullivan, M.D.

MNS/mo'd

Files
368

June 25, 1943.

Mrs. Eleanor M. Herrick
Todd Shipyards Corporation
1 Broadway
New York, N. Y.

My dear Mrs. Herrick:

We have left our official survey of the Todd-Erie Basin Dry Docks to the last in our survey of Eastern shipyards in order that we can evaluate what good plannings brings about in this industry.

I am asking Mrs. Wade Wright to visit the yard some time next week, accompanied by Mrs. Newman. Would you like them to call upon you first, or should they go directly to Brooklyn? I know how busy you are and that you may not have time to see them until they are ready to give you the full report.

May we hear from you.

Sincerely,

Mary Anderson, Director

MA:EMN:cam
cc/ Mrs W. Wright

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TODD SHIPYARDS CORPORATION
ONE BROADWAY
NEW YORK

WOMEN'S BUREAU
MAY 14 1943
DEPARTMENT OF LABOR

May 13, 1943

Miss Mary Anderson,
U. S. Department of Labor
Women's Bureau
Washington, D. C.

My dear Miss Anderson:

Thank you for your releases and other material on Women in Industry, all of which we have read with a great deal of interest.

Very truly yours,

Percy B Scott

Manager, Press Service Bureau.

PBS:AL

Routed by Skipper.

368

May 5, 1943.

Mr. Percy B. Scott, Manager,
Press Service Bureau,
Todd Shipyards Corporation,
#1 Broadway,
New York, N. Y.

Dear Mr. Scott,

Replying to your letter of May third, requesting recent releases and other materials issued by this bureau, we are pleased to enclose those that we think will be of interest to you.

If we can cooperate with you in any other way we shall be glad to have you call on us.

Sincerely yours,

Mary Anderson, Director.

LL
Encl.

TODD SHIPYARDS CORPORATION
ONE BROADWAY
NEW YORK

WOMEN'S BUREAU
MAY 4 - 1943
DEPARTMENT OF LABOR

May 3, 1943

Miss Mary Anderson,
Women's Bureau,
Department of Labor,
Washington, D. C.

My dear Miss Anderson:

I wonder if you would be so kind to send me at your earliest convenience, a set of releases and other material which you may have used in addresses covering the period of the last two or three months. It would be deeply appreciated.

Very truly yours,

Percy B Scott

Manager, Press Service Bureau.

pbs:al

Files
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TODD SHIPYARDS CORPORATION
ONE BROADWAY
NEW YORK

WOMEN'S BUREAU
MAY 5 - 1943
DEPARTMENT OF LABOR

May 3, 1943.

Miss Mary Anderson,
Director,
Women's Bureau,
U.S.Department of Labor,
Washington, D.C.

Dear Mary:

I have your letter of April 26th and regret that while I was in New York this past week-end it was just impossible for me to see your Mrs. Margarete L. Clark. My time was so scheduled that at times any overlapping made the remainder of the day a night-mare of haste! I do hope you will understand for anyone whom you recommend to me I want to see.

One of these days I am hoping to be in Washington on a purely social visit and shall hope then to have an opportunity for a long chat with you.

Affectionately,

Elinore M. Herrick

Elinore M. Herrick
Director of Personnel
and Labor Relations

P.S.However Mrs. Clark is to be referred to my Director of Women's Personnel at Erie Basin who will be most helpful I'm sure.

(Signed in Mrs.Herrick's absence)

File
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TODD SHIPYARDS CORPORATION
ONE BROADWAY
NEW YORK

February 17th, 1943

Miss Mary V. Robinson, Director
Division of Public Information,
U. S. Department of Labor,
Women's Bureau,
Washington, D. C.

My dear Miss Robinson:

Your letter of January 19th to Miss Margaret Sawyer, has been referred to the writer. It was not answered sooner because of the fact that I was out of town and did not get back to my desk until this past Monday.

I shall be glad to go through the picture files and make selections for you and mail them to you within the course of the next few days.

Very truly yours,

Percy B Scott

Manager, Press Service Bureau.

pbs:al

WOMEN'S BUREAU
FEB 18 1943
DEPARTMENT OF LABOR

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April 26, 1943

Mrs. Elinore M. Herrick
Director of Personnel and Labor Relations
Todd Shipyards Corporation
1 Broadway
New York City

Dear Elinore:

Mrs. Margarete L. Clark, who was head of the Minimum Wage Division in California, and is out because of the change of the complexion of politics (the Republicans going in where the Democrats used to be), is in New York at the Barbizon-Plaza Hotel, and would like to see you. I have a suspicion what she might want, but at any rate I have given her your New York address and telephone, so that she can make an appointment to see you.

Affectionately yours,

Mary Anderson, Director

MA:IS

Robinson Returned

Dr. Wolfson June 29, 1943

Occupations of Women in Shipyards - from unpublished material of the Women's Bureau collected from Navy Yards and Commercial shipyards during the first 6 months of 1943 (not all-inclusive)

Arc welding, gas welding and burning account for the largest numbers of women in the shops, on the ways, and on the platens.

Large numbers of women are also doing duplicating and layout on steel plates.

In the flag and sail loft in Navy Yards, women always have predominated, using power sewing machines to make flags, mattress covers, pillows, canvas tarpaulins, gun covers, etc.

In the pipe and copper shop, women now are bending, threading, and cutting pipe, and acting as helpers. In the pipe covering shop women cut asbestos material with electric cutting machines, and wire, stitch, and staple asbestos into pads for covering pipes.

In the sheet metal shop, women are doing outstanding work on hand operations, making equipment such as ventilator ducts as well as operating unusual machines like power shears and rolls.

In the electrical shop, women are especially good at wiring, soldering, coil winding, taping, and hand assembly.

In the joiner shop, women assist in making panels, boxes, flag standards, and wooden fittings.

In the mold loft (which is the aristocracy of the shipyard), women are assisting loftsmen and some are making templates themselves.

In those yards making and repairing binoculars, telescopes, and nevigating instruments, women are doing precision work.

In the various shops, women operate machines such as:

Lathes (enginerand turret)	Planers
Drill presses	Milling machines
Punch presses	Screw machines
Nibblers	Grinders
Engraving machines	Shapers

Women's occupations common to almost all shops:

Overhead crane operator
Bench work and subassembly

Toolroom attendant	Blueprint file clerk
Stockroom attendant	Factory office clerk
Material clerk	Sweeper or cleaner

MVR files

May 1, 1943.

Miss Kathleen McLaughlin
The New York Times
Times Square
New York City, N.Y.

My dear Miss McLaughlin:

Here are the shipyard "high lights" from our schedules.

The enclosed data are exceppts from schedules on 26 yards on the Eastern Coast recently surveyed by the Women's Bureau. These are a part of a very extensive study now in progress and will eventually cover the Pacific Coast yards. A complete report on the employment of women in the Shipbuilding Industry will be published by the Women's Bureau.

The extent of employment of women in the many shipbuilding jobs varies greatly from yard to yard. There is no set pattern as to where the majority of the women employees will be found - in the shop, in the yard, on the boat itself (the three main divisions in over-all shipbuilding work). What is given in the attached story on one yard should not therefore be taken as necessarily representative for every shipyard employing women.

You may wish to use the following statistics, the latest there is:

In March, 1943 approximately 70,000 women were employed on productive work in shipyards; this includes the commercial and the Navy yards. In March, 1942, only about 2,500 were employed. The largest number of women are in the Pacific Coast yards.

Sincerely yours,

JAS
PFN
erb

Mary V. Robinson, Chief
Information Division.

encl.

6 enclosures attached

I. Location - a shipyard on the North Atlantic Coast.

II. Product - Submarines - ships are completely fitted and finished here; certain parts as motors, engines, batteries are made elsewhere and installed here. Officers who are to command the submarines are stationed here during construction and know their ship literally insideout. (The first submarine machine shop was developed here by John Holland, "the father of submarines" in 1898.)

III. Number of women employed:
Over 500 on production.
About 300 clerical workers.
Expect by September 1943, to add about 2,500 yard workers, may have to be women.

IV. Requirements for employment and training.
"We hire workers, not men nor women, married or single (do not go into that) colored or white." All inexperienced are sent to State vocational school and are paid 70 cents an hour and have an 8-hour day. Welders get 250 hours training; machinists, sheet metal workers, and ship-fitters get 144 hours.

V. Turnover, less than 1 percent but are constantly trying to reduce it.

Absenteeism - About one-half of what it is for the industry as a whole. Try to investigate excuses. Every effort is made to keep up production. Posters and large signs made by the man who did the New York Central Station murals are about the yard. A large submarine marked "For Hirohito" is outlined on a board in the yard and the hours of absenteeism are being marked off, so that when enough hours have been lost to complete a submarine, they consider they have built a submarine for the Jap. At the head of each ways, there is a large sign marking the progress of building that ship. The progress each week is marked up. A figure representing "Uncle Sam" is at the top. If progress, is ahead of schedule, he is tipping his hat to the workers, if just on schedule, he is erect, if below schedule, he is frowning.

VI. Hours of Work. - The yard is on a round the clock schedule, 8 hours a day, 6 days per week. Nearly three-fourths of the women are on the first shift - 7.15 a. m. to 3.15 p. m. and less than 6 percent on the graveyard shift, from 11.15 p. m. - 7.15. a. m. When there is a rush of work as fitting and finishing a ship, women occasionally work 7 days. Whenever the women work over 48 hours, they have to get special pemission each time from State Labor Department.

VII. There is absolutely pay-for-the-job policy in the yard with no sex differential. All new learners are paid at the rate of 70 cents per hour for a probationary period of one work month, then in accordance with merit increased to not less than 75 cents per hour. The hourly rates for experienced women workers range according to the job, from helpers 91 cents and $1 to welders $1.11, $1.20, $1.27.

VIII. Women's jobs. This company has three yards each one repeating the activities of the other. This is so that as much water frontage as possible can be utilized and the ways may be accessible to the shops and yards getting out work for the ships. Women are working in all three yards - chiefly in the machine shops, sheet metal shops, ship fitting department and as electrician's helpers.

About one-fifth of the women on production are burners and welders in various departments both tack welding and welding of various parts.

60 girls were in the "Outside Electrician's" department making the hangers for putting up the wires and cables, assemblying various parts, and helping to install the wiring in the ships.

In ship-fitting, girls work as helpers to lay-out men and also make templates of paste board to fit certain parts of the ship after it is on the ways.

Riggers - several women work in the loft sewing canvas for various covers.

Machine shops - nearly 40 percent of the girls in the machine shops are working on inspection (using micrometers) and on hand assembly work. They are also working on drill presses, gear cutting machines, on milling machines, lathes, turret lathes, and one girl is doing an excellent job on an engine lathe, turning bevel gears and of course there are tool crib attendants.

Sheet metal shop - Here the girls are helping the men lay out the work on sheet metals from templates, are operating presses fabricating sheet metal cooking pans, and galvanized metal ventilating boxes, etc. They are also doing welding in this department.

Foundry - women are used here now only in the tool room, giving out tools. They will be employed as core-makers and as pipe-fitters' helpers soon.

Mold Loft. - Two women are employed here making final tracings on cloth of the final pencil drawings of parts, etc., from which all blueprints are made. The foreman said the girls had been very satisfactory, did excellent work and were taking over more and more all the time.

IX. Safety Clothing. - Women are not required to wear a uniform costume but are required to wear clothing meeting safety requirements:

Hair must be completely confined by a cap - no bandannas, scarfs, nets, or snoods while working at or near moving machinery or in the vicinity of welding operation. Dark blue ~~gkx~~ caps of acceptable type may be purchased from the matrons for 72 cents each. Leather aviators' helmets are recommended for welders.

Shoes of sturdy material, low heels, closed toes.
No jewelry.
Goggles must be worn wherever danger to eyes from welding arcs of flying particles of metal

Either one-piece cover-alls or two-piece slack and shirt outfits of suitable material - dark blue denim and twill seem most suitable - sweaters, jackets, or coats may not be worn over work clothes. Short cuffless sleeves preferred for working near moving machinery.

Regulations for Work on Boats.

Long coats may not be worn on boats; hip length jackets are acceptable.

Hard helmets and gloves must be worn at all times, hair should be completely covered by helmet.

Shoes covering ankles - boys' or men's shoes are recommended - in no case narrow, or high heels.

Welders have to buy leather jackets and trousers, (cost $16); are furnished helmets, goggles, and gloves by company.

X. Medical facilities - Women have preemployment examination. A splendidly equipped hospital at each of three yards. Nurses on 24-hour duty, and company doctor.

XI. Food Service - Food provisions within the yards are very good - a canteen serves complete hot meal for 50 cents. Also have numerous food booths at points convenient for both inside and outside workers; serving coffee, sandwiches, soft drinks.

XII. General Comments - General working conditions throughout the yard seemed excellent; rest rooms and toilet facilities were adequate and clean. There was an unusual amount of interest in the welfare and morale of the workers.

General plant practices for women productive employees in the Women's Bureau Eastern Coast Ship-yard Survey

Pay for the job - no sex differential; 7 percent increase over base rate for second and third shift.

In over one-half the yards, women work on three shifts; however two-thirds or more of the total women force are on the first shift, and usually 10 percent or less on the "graveyard."

Lunch period of at least 30 minutes.

Work week of 6-8-48 (Two yards employed women 7 days, and 1 - 5 days.)

No regulation for uniforms, but special type of safety clothing. Goggles where needed, hair completely covered, heavy flat heeled shoes, with covered toes, no jewelry.

Description of safety clothing worn by women in three establishments.

Plant No. 8

Uniforms recently adopted - dark blue onepiece coverall, ($4.00) snaps at ankles so can be fitted tight for certain jobs; long tight sleeves - some bought other clothing previously and are allowed to wear it. Some workers had several layers of clothing as well as long underwear under coveralls - working in the open. Hard hats are provided when needed; all workers on ways and platens wearing these. Welders must furnish own jackets ($10.00) and gloves ($2.00). Welders asked to wear boots covering ankles. Shoes with reinforced toes are required. Difficult to get all the desirable equipment. Safety engineer says he doesn't believe hard hats necessary on all burning and welding jobs. Company is trying to get some type of standard wool head covering.

Plant No. 10

No uniform required but "suitable clothing" of slacks or coveralls - cuffless coveralls, jumperalls or slacks with flat hip pockets are required. Blouses with sleeves, close fitting at wrists (if full length) and with sleeves without reinforcing (if short lengths) kept tucked inside at waist. Shoes with medium or low heels and closed toes. Safety shoes with reinforced vamps are recommended where weighty material is handled. Wooden soles are recommended where acids or conditions of excessive moisture and heat exist. Berets, caps, turbans, nets or kerchiefs with snug but not tight fit are required and must confine the hair completely. If brimmed or visor must be of non-inflammable material and stiff enough to act as a warning when striking machinery. If of net must be closely woven. Gloves when necessary, and of washable, non-irritating, non-inflammable material.

Goggles required where necessary, i. e., grinding, chipping, welding, scaling, riveting, drilling at high levels, machining rough cuts, and while handling molten metals or chemicals in open containers. Company provides welder's goggles - Few goggles seen except on cutters. Women in structural shop welding wear shields but no goggles. Goggles are received only a few hundred at a time when they have thousands on order. The cup type goggles which they have, so limit vision, that they are a hazard on scaffolding and no spectacle type goggles are available.

Plant No. 17

Not required to wear uniforms, but must wear safety clothing suited to the job. Slacks for those in the yard. Hair covered - heavy hair net and various kinds of caps. Wearing two kinds of suits - tan butcher boy type jacket, open in front, and slightly fitted, with a peplum in back covering the hips; short sleeves - made of medium khaki or denim; slacks - legs narrowed at bottom. The other is dark blue coverall with narrow belt and long sleeves - medium denim, visor cap. Flat heeled, closed toe, heavy shoes. Free gloves where needed. Welder's shield planned by company - two pieces of heavy canvas and stitched in or quilted between are pieces of imitation leather to keep heat from face. In a slot about size to cover eyes are put 3 pieces of glass - 1 colored and 2 plain to keep heat from eyes. This slot has a glove button on it, so glass can be removed and put in. This is used when there is not enough room for usual welder's shield. Knee pads also provided, made of imitation leather, padded with a cotton or wool mixture, padding made on the order of football knee pads. (No women welders as yet).

Goggles furnished when needed.

Description of the "yards" and "ships" in selected shipyards.

Plant No. 18 (Poor conditions)

On the boats in outfitting docks, "many workers were crowded on each boat (in fact some question has been raised as to whether there are not too many workers on each boat). There is an appearance of general confusion and walking must be done carefully, even on the top decks because of the many pipes and valves which are found on a tanker. Also, on boats it is very likely to be true that welders' lines are strewn around everywhere. Climbing up and down long laddsrs is required to get into the fuel tanks to do welding and to do various other types of work in the boats. For a time the ladders are temporary wooden structures.

Plant No. 22 (Good conditions)

This is the most compact yard that agent has seen, and if there are railroad tracks, they are on the outskirts of the yard and not where the workers are going about. There is not the activity in this yard that has been seen in the other yards. There are some cranes, but these are very near the ships or in the shop, whereas in other yards they are about in many places in the yard. Much of the yard is hard surfaced and so there is not the dust when the wind blows. Roads are wide and well laid out. There is not so much material in the yard, and this is neatly stacked.

The shops are small and as a great part of the work is done on the ships, the shops seem rather inactive. The shops are neat and orderly with wide aisles. The workers are well placed and there was no crowding. As agent observed, the machines seemed well guarded, and noticed no unsafe machine.

Plant No. 23. (Good conditions)

There is much activity in this yard, many railroad tracks, switching cars back and forth, and the vehicular traffic that goes with a busy yard. In addition to this traffic, there are numerous cranes with their heavy overhead loads. (At time agent was in the yard it was very windy, a crane took a large piece of steel up, but had to put it down again, as the wind was blowing it so hard that moving it was too dangerous.) There is no boundary line for pedestrian and vehicular traffic but all are taught to observe safety rules and so the danger is lessened. The roads are wide and well laid out.

This yard is not hard surfaced and as the ground is bare it was dusty and especially so when the wind blew. Material is stacked over the yard in orderly fashion.

Shops are new and patterned after like shops in other yards of company; seem to be well planned and are not crowded. Aisles are wide and not obstructed. No slippery floors seen.

INDUCTION OF WOMEN IN AN ATLANTIC COAST Shipyard

(Notes from Women's Bureau Schedules)

The induction of the women in shipyards seems to have been made very carefully in some instances. In one comapny women have been employed but two months. This shipyard has a long tradition in shipbuilding and employing many of the same families who have grown up in shipyard work. In hiring women, preference is given to relatives of the men employed. This yard has a waiting list of thousands of women applicants. The Company made every effort to build up confidence in the women by giving them equal pay for equal work, as they felt it would be poor psychology to pay them less than men. It would make them feel inferior to the men and they would think that they were not expected to do as well as the men. The women were put at once on men's complicated jobs purposely, as the Company feels that if women were given the menial jobs it would give them an inferiority complex. Also as menial jobs are easiest to fill, they are therefore using women to their utmost abilities, following the above policy.

The Company has promised all men that if a woman takes over a man's job he will be given an equally good or better job with the result that the men have spared neither time nor effort in training the women. Otherwise it would have been very hard for the women to learn the work. Jobs of Negro men are given only to Negro women.

The Company has not been in a hurry to train women as welders as when they begin they will necessarily be given the lighter welding tasks, those on which men make the most money through piece work. The Company is very conservative and women are not on the ships as they consider the holds too big, too far removed with too many pitfalls on the ships. They are very proud of the fact that men have shown no resentment to the women, who for the most part, are wives, daughters and other relatives of the men already employed in the yards. This is one of the largest yards reported to date by Women's Bureau agent.

A smaller yard in another port reports that they tried not to make an issue of the employment of women, and their men have been exceptionally understanding and their attitude and reaction has been very good. The men are willing to stop and explain the work in detail, giving the women the benefit of all they know about her job. They have b been very particular to hire a high type of women.

MISCELLANEOUS EXCERPTS FROM SCHEDULES

Crane operators. In a company where women operate overhead cranes from 30 to 100 ton (inside) and expects soon to put girls on transverse cranes in the yard. In this company the following comment was made by and official:

> "We have had girls on cranes for about 6 weeks. They are doing very well. There seems to be something about it that is particularly adaptable to women. They are very careful - not so fast, but that will come in time. The average time taken to train a girl on crane operating is 4 weeks, but one of our best was trained in 4 days. After 4 days, the man came down and said she can do as well as I can. There's nothing more to teach her, and from then on she has operated alone. A crane operator needs to have average intelligence and an even temperament - couldn't use a person who is nervous or scared."

Comment of official in another yard -

> "I believe the best workers we have are the young married girls with husbands in the armed forces. They have no home and they keep right after it." He also said an especially good worker is a former textile mill worker. "She never stops, never complains, and you wouldn't know she was in the shop."

Excerpts
From INDEPENDENT WOMAN
March 1943

ANCHORS AWEIGH!
by Beatrice Oppenheim

It has been little more than a year since the tradition that stout ships must be built by strong men was first challenged. Now, at least 23,000 members of the "weaker sex" have joined the work crews, and the prediction is that by the end of 1944, 225,000 women will be among the 1,500,000 workers needed in the nation's commercial and Navy shipyards to speed us to victory.

Estimates of the eventual number of female shipbuilders leap each month. J.C. Murray, personnel director of the Kaiser Portland(Oregon) yards, believes that 30 per cent of all shipbuilding tasks can be carried on by women. There is a British shipyard where two-thirds of the workers are on the distaff side.

With an adaptability that has amazed personnel managers, these former stenographers, saleswomen, housewives, teachers, beauticians, college students, and chorus girls have become welders, flame-cutters, crane operators, shipfitters, foundrymen, sheet metal workers, electricians, drill press and lathe operators, truck drivers, and even yard police. The writer has counted more than 100 different shipyard tasks performed by women. They range from "laborer" to "personnel director", from "blacksmith" to "Naval architect."

A good deal of the work is far from dainty, and much of it requires real stamina. There are women who carry on outdoors in rain and snow. Others labor in open sheds, where the whistle of the winter wind is drowned out by the clang of steel. Women welders, masked against an electric arc 6,500 degrees hot, "sew a fine seam" in great steel plates. Girl boilermaker's helpers clamber all over a ship, and are at home atop a deckhouse or on the ground.

Shipyard men are no longer surprised that the little figure deftly tossing white hot rivets never pitched on a sand-lot baseball team. Nor does the president of the local women's club arouse the slightest attention when she appears at the controls of a "doodle bug", a mobile crane which lifts tons of steel.

It is difficult in the shipyards to distinguish the blue-jeaned women from men. Cosmetics and jewelry are generally taboo. Hair, which might catch in the moving parts of machines, is covered with a bandana, work cap.or plastic helmet. Steel-toed safety shoes add a final businesslike touch.

Strangely enough the female shipyard crews are by no means limited to young girls. Some yards refuse to accept girls under twenty; one rarely takes an applicant under twenty-two. The average range if twenty-five to forty-five; with surprising frequency one comes across women between fifty and sixty.

Mrs. Elizabeth Morden, fifty-seven, whose four children and five grandchildren were her chief interest before the war, has recently taken her first job--as a "burner" at a Kaiser Richmond (California) yard. Four grandmothers were among the first 100 women hired by Federal Shipbuilding and Drydock Company at Port Newark, N.J. All four now operate power tools. Almost every large yard has similar stories in its records.

It does not necessarily take Amazonian strength to build ships. Betty M. Cook, expert operator of a burning machine that cuts long, sweeping curves in thick sheets of steel, weighs just over ninety pounds with her heavy "clodhoppers," her hard hat, and her hands full of equipment.

NATIONAL WOMEN'S TRADE UNION LEAGUE OF AMERICA

LIFE AND LABOR BULLETIN

317 MACHINISTS BLDG. WASHINGTON, D. C.

NO. 41 APRIL, 1943

WOMEN IN SHIPBUILDING

Shipbuilding as an industry employing women is having almost as amazing a boom as aircraft recently has had. Only 36 women were reported by the Census as productive workers in shipyards in October 1939. By January 1943, the number of women was nearly 55,000, almost three-fourths of them in commercial companies, the remainder in Naval Yards. It is estimated that 400,000 women will be doing productive work in shipyards before the end of 1943. The Chairman of the Shipbuilding Stabilization Committee reports women will receive equal pay with men.

Kaiser on the West Coast led the way so far as private companies are concerned, putting on women in May 1942. Meantime, the Washington Navy Yard had been experimenting with them. By January 1943 the Kaiser Yards had more than 2,000 women in production work, welders getting $1.20 an hour. In June 1942 the Charleston Navy Yard was employing women, and 8 months later in February 1943 had about 2,000, and hopes to have 10,000 by this summer.

Besides the usual welders, burners, electrical helpers and sheet metal helpers, women in the Charleston yards operate band saws, cranes, and bending or shearing machines; they do tracing and drafting, and some are in the optical department; they are shipfitters' helpers, helping loftsmen in the mold loft; at least one drills holes in a circular metal piece, herself clamping the metal to the work table.

In July the Tampa Shipbuilding Co. hired its first woman welder, and the Tacoma Shipbuilding Corporation had 4 women in the machine shop. In the Fall, the Navy Yard in New York had 125 women, and some had done so well in precision work they were assigned to the optical shop. They are accepted for membership in 27 unions and receive the same pay as men for comparable work. At the same time, the Navy Yard in Philadelphia was advertising for women junior radio inspectors at $1,620 a year. Builders of submarines in Manitowac, Wisconsin, and New London, Connecticut, were employing a few women, as were ship companies in Mississippi and Alabama.

In December, 6 Oregon companies were reported to have 6,400 women on production besides 5,000 workers in the offices. At the same time 40 women were at work at the Navy's Model Basin in Carderack, Maryland, where ship models are made for ship architects and identification study at naval training schools. Here women were learning model making as well as toolroom procedure, milling machine operation, and instrument production; no two operations are exactly alike, as material dealt with is largely experimental.

A recent report from major shipbuilding companies shows over 60 per cent of the women wage earners to be welders, and 18 per cent helpers in various crafts. Occupations next in number were burners and warehousemen. But women also are doing a great variety of jobs. In machine shops they operate vulcanizing machines, drill presses, tool grinders; a few are rodmen for ship engineers, a

surveying job; they sand decks, flag lockers, and life preserver racks; they are painters; they are doing silver and soft soldering and making gaskets and pipe fittings; they do various checking jobs, as welding checker, tool checker, materials checker. Women steel checkers at Rheems in Rhode Island learn to use a routing chart and follow each piece of steel from fabrication to hull, to give the production department knowledge of progress.

The Women's Bureau reported women in New Jersey shipyards as acetylene burning, operating acetylene cutting machine, and power hack saw, time keeping. Women serve as guards, as messengers, as laborers. Todd Erie Basin reports a woman as skilled toolmaker. At the Cramp Co. in Philadelphia a woman operates a keelbender, working two levers at the same time as each controls one end of the keel; she must be able to use both hands equally well.

The A.F.L. Boilermakers' Union has agreed to accept women members, and in a Seattle shipyard they were started last fall as welder trainees for heavy welding on boiler plate, receiving $1.05 an hour as trainees. In the plate shop of the Richmond Shipyard in San Francisco, a woman burner is so exact that she is moved through the shop wherever intricate lines are to be burned. Girl welders are reported exceeding the footage records of men, though they are not so able as men to shift to different types of welding. The fact that such large and growing numbers of women are in shipyards, both commercial and Navy, one of the last places in which you would expect to find them, gives a good indication of the great extent to which women are making an active contribution to industrial work.

--Mary Elizabeth Pidgeon, Chief,
Research Division, Women's Bureau
U. S. Department of Labor

U. S. LABOR DEPARTMENT CONFERENCE

On March 11 and 12, the Secretary of Labor called a conference in Washington of State Labor Department officials from 11 Eastern and Central States and the District of Columbia, to discuss problems connected with the employment of women in war industries. The Women's Bureau of the U.S. Department of Labor conducted the conference sessions, which concerned such important subjects as the types of work women can do, working hours in wartime, industrial health and safety standards, and adjustments in home and factory to reduce absenteeism among women and increase production.

The conference went on record in favor of maintaining reasonable hour standards in both war and civilian industries through the unanimous adoption of two resolutions.

The resolution on war industries stressed the value of upholding such standards as the 8-hour day, 48-hour week, one day of rest in seven, the same wage rates for women as men, proper safeguards for health and safety. It was pointed out that these standards were endorsed at all previous conferences of State Labor officials since the beginning of the war, and that War and Navy department representatives at the present conference had testified to the necessity of maintaining them, subject only to exceptions in emergencies created by the urgency of the war effort.

The resolution on civilian industries declared that labor standards should not be relaxed to permit war workers or civilians to obtain articles and services that may be desirable in peacetime but which are not truly essential in a wartime economy. Relaxations for civilian industries should be limited to subsistence needs and should be granted only in areas of extreme labor shortages.

States represented at the conference were: Delaware, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, and the District of Columbia.

Schroeder--WMC-2036

OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

For Immediate Release
Monday, July 12, 1943

PM-4413

Shipbuilding and the repair of battle damaged vessels have been given a high priority in the recruitment of manpower, Paul V. McNutt, Chairman of the War Manpower Commission, announced today.

A recruitment campaign for skilled and unskilled labor for the shipyards is being conducted in nine War Manpower Commission regions. The demands of the shipyards along the Pacific and Gulf coasts are especially heavy and urgent and, as a result, it has been necessary to go into communities in almost all sections of the country except where critical labor shortages exist.

Chairman McNutt, said, however, that every precaution was being taken to prevent the recruitment campaign from interfering with other essential activities in areas being canvassed for shipyard workers.

Recently, Mr. McNutt pointed out, the War Manpower Commission cancelled all inter-regional clearance orders, numbering many hundred thousands, and set up a centralized procedure for moving workers from one section of the country to another. Under the new procedure, preference in the movement of workers was given to prospective shipyard workers. The demand was so urgent and so vitally concerned the war program, that it was felt that the needs of the shipyards must be met and at once.

Such recruitment campaigns, however, have been under the close and careful supervision of the local offices of the United States Employment Service. Applicants are "screened" in such a way that proper weight is given the essential needs of local activities before workers are permitted to make contact with hiring officials of shipyards. No applicants engaged in essential activity at their highest skill are referred to out of town employers. Also, local employer orders are given priority over all orders from other areas.

"On the whole", said Mr. McNutt, "this has resulted in protecting the labor force of other essential activities."

"The nation-wide character of the campaign will, it is anticipated, prevent too many workers being withdrawn from one area. In June, the total of shipyard workers recruited from non-shipbuilding areas was approximately 6,000. The effect of any one industry or activity was minimized by the fact that this number of workers was withdrawn from the entire country. The total, however, has been vitally important to the shipyards. We hope, by keeping the campaign practically nation-wide to prevent hardships in any particular regions."

X-17939

ADVANCE RELEASE

Peiffer - 75012
ADVANCE RELEASE: FOR SUNDAY PAPERS, July 4, 1943

OFFICE OF WAR INFORMATION

OWI-2091

FILES

(Editors: This is one of a series of releases on women in essential jobs. The next will appear shortly. Photographs to illustrate this release may be obtained on request to Photographic Division, Office of War Information, Room 1405 Auditor's Building, 14th and Independence, Washington, D. C. The photographs, available for publication only, are numbered OWI-25890, OWI-25931 and OWI-30906.)

--- News Bureau

JUL 1 - 1943

The lady welder and others of her kind have undergone considerable "glamorizing" during the last year or so and this has created a popular impression of the woman industrial worker which does not seem to be entirely borne out by the facts -- at least in the field of shipbuilding. "We want good strong women who will do a good day's work," said the personnel director of a large Eastern dry dock company. "We want women of maturity who are sensible, who will fit into the shipyard and who will have a sense of responsibility to themselves and to their country." And by and large that seems to describe the 43,000 women who have already gone into shipbuilding.

"Something like driving two automobiles at once" is the way one grandmother described her job with a Philadelphia shipbuilding company. Reported to be one of the first lady keel benders in the country, this 42-year-old widow has been operating a 1700-ton machine "as good as any man" according to her foreman. For ten years prior to her shipbuilding job she supported herself and three youngsters by selling cosmetics, but she was far from sorry when she changed over to heavy industry.

"I'm never happier," she said, "than when I have my hands on some nice big machines." She wants to keep on working with machinery after the war. "But I suppose when the men come back they'll be sending us back to our kitchens. You know how men are -- so unversatile. Women are willing to try any job but men figure they can't get along unless they come back and work at the same old thing." Deeply attached to her grandchildren she said, however, "I'd do anything for them except let myself get stuck with bringing them up. I've had my family and child-rearing, now it's my turn to be independent."

X-17317

Women have been reported working as ship carpenters at the Philadelphia Navy Yard, turning out gigs, whaleboats and other small craft. At the Washington Navy Yard several hundred Negro women have been employed during the last few months after first undergoing the training provided by the National Youth Administration. Although not actually building ships, these women are working in the shops and are acting as machine workers and mechanics' helpers. One of these women had been working as a domestic servant and her income frequently dropped as low as $4.50 a week. She decided to enroll for free training at the NYA Training Center and after a five months' course was enrolled as a helper at the Navy Yard last September. She is still at the Yard and her new skill is now bringing in about $45 a week.

Although working for a large shipyard, one California architect has turned out ships with tools so tiny that some of them had to be purchased at toy stores. Starting out as an architect after the last war she has constantly been deflected into model building because of her skill at turning out the miniature replicas which are so useful for studying production problems before actual construction is begun. Getting into model making quite by accident, she became so proficient that she was given a contract to model the Sacramento Fair. When the present war broke out she decided that civilian architecture was a good profession to get out of and determined to go into war work. Marine architecture was her choice but when it was discovered at the shipyards how useful her models were she was asked to continue making them. She agreed and was kept so busy that she required the services of five assistants to help cut the intricate little parts and to figure dimensions. She claims that the art of model making is not just a hobby grown up but is "good hard work."

Of the first hundred women hired by a large New Jersey shipyard, four were grandmothers and most of the others were well beyond their teens. One of the grandmothers had worked in an English motor plant during the last war so that this was not entirely a new experience for her. She and her husband moved to this country 20 years ago but her family remained in England. Three of her sisters and two of her brothers are reported to be in uniform, two nieces in war work, and her parents were

killed in an air attack on Manchester in 1940, so that her sincerity is apparent when she says, "I'm proud to be able to do something for the war effort."

A lathe operator at the Boston Navy Yard has led a varied life for the last 13 years which has included, travel and farm work, publishing and domestic service. For several years she spent her summers publishing a newspaper (circulation 150) and her winters working as a maid. Then she made a series of trips which took her through 44 states and Alaska, returning home to Massachusetts in between trips to resume her career as a domestic.

Following her Alaskan expedition, this woman worker took the Navy Yard job as a war contribution and also to collect additional material for a projected book. "It will be based on my life," she said, "but it will have a different heroine of course. You can make things so much more dramatic in fiction." Her only complaint about the Navy Yard job was that her hours prevented her from attending meetings of the Esperanto (universal language) Club of which she was secretary.

One of the speediest conversions to war work on record was that made by a 30-year-old Alabama woman who was working as a knitter in a hosiery mill. She left her home at Fort Payne one Saturday morning, arrived in Baltimore, Md. the next day and by Tuesday she was at work in a shipyard.

A one-time protegee of dancer Ruth St. Denis recently traded her dancing garb for a welder's hood and 12 pounds of protective leather clothing. She put in 160 hours of hard study at a government training school in Sausalito, Calif., but despite this and "all of the physical training I've had from my years of dancing" she had to admit that "the first few weeks of working as a welder left me completely worn out" -- adding, however, "that's over now." She has no regrets at having abandoned her dancing career for the time being and said of her shipyard job, "I feel like I'm doing the most important thing I've ever done in my whole life. So does the ex-waitress and the former art teacher who work beside me. We're helping to make history and we're getting chances that women have never had before."

ADVANCE RELEASE

ADVANCE RELEASE: For MONDAY AFTERNOON Papers, June 7, 1943
ORR-WMC 2037 PM-4398

OFFICE OF WAR INFORMATION
WAR MANPOWER COMMISSION

For every nine men working in the yards of The New England Shipbuilding Corporation at South Portland, Maine, there is one woman who, in many cases, is "doing a man's job," the War Manpower Commission said today. Ten per cent of the more than 26,000 workers in the yards are women. Many of them are in the offices, but most of them are on work that puts callouses on the hands. Among them are riveters and welders but many of the huskier ones are on jobs that call for the brawn it was once taken for granted only the male could provide. Before the end of the year the management expects to have on its payroll many more women. Even now many women are among the "job instructors" -- and men as well as women are sent to them for guidance.

These are a few of the facts gathered by a representative of the Apprentice-Training Service of the War Manpower Commission made public today by the Commission's Chairman, Paul V. McNutt. They are included in a survey showing the expanding picture of a successful in-plant training program in the South Portland yards.

All new employees, the survey shows, are assigned to the training center for a short period to acquaint them with the industry and to inform them of what is expected of a shipyard worker. Men and women are given the same training, and there is no sex segregation either during training or on the job.

An introduction to yard terms, layout and shipbuilding practices is given to the employees during their first day of paid employment at the training school. If, after the on-the-job training period, an employee shows he or she is qualified for training for more highly skilled work, he or she is returned to the training department, for example in the electrical department, where he or she receives a 16-hour course in circuit layout and methods standardization.

Selected workmen from production departments, if found qualified, are given a ten-hour job-instructor training course. The company is in need of 2,000 job instructors in the yards and the survey shows it now has fewer than 1,000.

Most of the employees have been referred to the company by the United States Employment Service office. In view of the on-the-job training each employee will receive, personal qualities and a good work record are more important for a new worker than educational qualifications.

The South Portland company claims one of the finest safety records of any maritime yard on the east coast, perhaps due to the extensive safety training which is given in the yards. On July 1, 1942, first-day safety training lectures were inaugurated for new employees. A number of health rooms with nurses have been established.

(over)

"Orientation" day is the first day of paid employment at the yards for all employees. Brief talks are given by representatives of the personnel department, the Office of Civilian Defense, the safety training director, a representative of the training department. Moving pictures, telling the story of the building of a ship, are also shown. This morale-building schedule is for the purpose of informing employees of the opportunities for advancement in the yard, and also for informing them of what is expected of them as employees.

Record sheets are maintained for each employee to determine progress and qualifications for further training and upgrading. Each employee is offered advancement opportunities. It is expected that the company will have a number of women in supervisory jobs before the end of the year.

Men and women from all levels of society and with all degrees of education are now at work in the shipyards. A personnel officer advises the women employees regarding appropriate clothing for this type of work, and suggests a doctors' check-up to find if a woman is fit for shipyard work without injury to herself.

Professional men and women, lawyers, teachers, news writers, automobile and tire salesmen, guides and resort operators, are among the workers in the yards, attracted by the high rates of pay and because of many of their former occupations have been suspended for the duration. One woman burner working for the company has three college degrees. She is 52 years old. She took the job for patriotic reasons and likes the work.

Townsell - Maritime - 60

MVR

OFFICE OF WAR INFORMATION
UNITED STATES MARITIME COMMISSION

For Immediate Release
Monday, March 1, 1943

OWI-1358
PR 1451

The woman shipyard worker, her hair confined under a bandana and topped by a large hard safety hat, dressed in a coverall garment fitting close at the wrists and ankles with nothing to catch in whirring mechanism, will be as safe from accident as a conference of shipyard safety experts can make her.

Representatives of 90 percent of the shipyards engaged in work for the United States Maritime Commission and the United States Navy, meeting in Chicago last December, drew up a set of standards covering clothing and protective devices for woman shipyard workers which they believe will eliminate most of the safety hazards presented by women's conventional attire.

Beginning at the head, the conference recommended not only that the hazard of straggling hair drawing her head into moving machinery be eliminated, but that the safety hat be high enough to warn of closeby dangerous machinery, stiff enough not to catch in moving mechanism and large enough to fall off easily if struck by a moving part.

For protection of her eyes the conference recommended impact-resisting safety goggles with side shields where there is a hazard of flying objects, and goggles with tinted lenses to protect against the rays of welding arcs. Both should be of a type meeting approval of the U. S. Bureau of Standards. For certain operations it was suggested that a face mask of cellulose acetate and goggles may be worn. For women welders the conference advised the standard tilt welders type helmet, fastened to the safety hat and with the rest of the head protection in place. Tinted goggles are worn under the helmet.

A coverall uniform of any closely woven wool or cotton material of weight suitable for the type of work and the season, but styled to give ample room for action jobs was suggested by the conference. Plastic or metal buttons covered with flaps, cuffless sleeves and trousers with legs fastened at the ankles by a strap or button, all pockets flat but no breast pocket, flat seams, and a close fitting neck, make for a smooth surface that gives little chance for clothing to be caught in moving machines. Color is optional. Puff shoulders and extending collars or neck pieces are not permitted by the regulations. A belt may be used at the waist, provided its design is an integral part of the garment and has no free ends after fastening.

A woman welder's garment, the regulations say, should be a flame proofed coverall of the above description, or a two piece outfit of wool trousers and shirt plus a flame proofed welder's leather set.

Shoes for the women workers should be of the safety type and of the same rugged construction as those worn by men, the regulations conclude. Steel not plastic toe caps, low heels and leather or cord type soles and heels complete the shoe specifications which meet the recently adopted American Standard Code for safety shoes.

X-10995

RVN

Confidential: Not to be used in this form

Number of Women Wage Earners in Commercial Shipyards

Year and Month 1/	Number of Women Wage Earners	Percent of Total Wage Earners
1942		
March	2,300	0.5
April	2,400	0.5
May	2,400	0.4
June	2,400	0.4
July	3,300	0.5
August	4,800	0.6
September	6,100	0.7
October	13,600	1.5
November	21,400	2.2
December	33,500	3.3
1943		
January	40,000	3.7
February		4.6
March		4.8
April		5.5
May		6.0
June		7.2
July		8.0
August		8.8
September	118,666	9.4
October	122,249	9.7
November		
December		

1/ Work week ending nearest the 15th of the month.
Source: B.L.S. - report for War Production Board
Wage Earners: Production, maintenance, shipping, warehousing, and power plants

Note: Over 500 yards are included in the report (Oct. '42)

Excerpts
From INDEPENDENT WOMAN
March 1943

ANCHORS AWEIGH!

by Beatrice Oppenheim

It has been little more than a year since the tradition that stout ships must be built by strong men was first challenged. Now, at least 23,000 members of the "weaker sex" have joined the work crews, and the prediction is that by the end of 1944, 225,000 women will be among the 1,500,000 workers needed in the nation's commercial and Navy shipyards to speed us to victory.

Estimates of the eventual number of female shipbuilders leap each month. J.C. Murray, personnel director of the Kaiser Portland(Oregon) yards, believes that 30 per cent of all shipbuilding tasks can be carried on by women. There is a British shipyard where two-thirds of the workers are on the distaff side.

With an adaptability that has amazed personnel managers, these former stenographers, saleagirls, housewives, teachers, beauticians, college students, and chorus girls have become welders, flame cutters, crane operators, shipfitters, foundrymen, sheet metal workers, electricians, drill press and lathe operators, truck drivers, and even yard police. The writer has counted more than 100 different shipyard tasks performed by women. They range from "laborer" to "personnel director", from "blacksmith" to "Naval architect."

A good deal of the work is far from dainty, and much of it requires real stamina. There are women who carry on outdoors in rain and snow. Others labor in open sheds, where the whistle of the winter wind is drowned out by the clang of steel. Women welders, masked against an electric arc 6,500 degrees hot, "sew a fine seam" in great steel plates. Girl boilermaker's helpers clamber all over a ship, and are at home atop a deckhouse or on the ground.

Shipyard men are no longer surprised that the little figure deftly tossing white hot rivets never pitched on a sand-lot baseball team. Nor does the president of the local women's club arouse the slightest attention when she appears at the controls of a "doodle bug", a mobile crane which lifts tons of steel.

It is difficult in the shipyards to distinguish the blue-jeaned women from men. Cosmetics and jewelry are generally taboo. Hair, which might catch in the moving parts of machines, is covered with a bandana, work cap.or plastic helmet. Steel-toed safety shoes add a final businesslike touch.

Strangely enough the female shipyard crews are by no means limited to young girls. Some yards refuse to accept girls under twenty; one rarely takes an applicant under twenty-tro. The average range if twenty-five to forty-five; with surprising frequency one comes across women between fifty and sixty.

Mrs. Elizabeth Norden, fifty-seven, whose four children and five grandchildren were her chief interest before the war, has recently taken her first job--as a "burner" at a Kaiser Richmond (California) yard. Four grandmothers were among the first 100 women hired by Federal Shipbuilding and Drydock Company at Port Newark, N.J. All four now operate power tools. Almost every large yard has similar stories in its records.

It does not necessarily take Amazonian strength to build ships. Betty M. Cook, expert operator of a burning machine that cuts long, sweeping curves in thick sheets of steel, weighs just over ninety pounds with her heavy "clodhoppers," her hard hat, and her hands full of equipment.

EXTRACTS FROM NEWS ITEMS IN NORFOLK VIRGINIAN-PILOT, January 1943

Norfolk Navy Yard

A concerted drive for the enrollment of woman-power is to be the first concern of the Hampton Roads Manpower Committee, local authority just appointed to function in this area for the War Manpower Commission. The Government estimates there is a potential of 30,000 women in the Hampton Roads section who might be enrolled for important war production jobs. Of these, the local committee hopes to enlist not less than 15,000.

"It is cheaper to train a woman for war work than to build a house."

If women already living here can be enrolled in training classes and put to work, the jobs will be filled by persons who already are occupying the scarce living space of Norfolk, Portsmouth, Newport News, Hampton, Williamsburg and their territories.

The invitation is open to all able-bodied females, without regard to age, to inquire what jobs are open to them/ Schooling will be provided free of charge, and work is promised to all who prepare themselves. Women workers are wanted, and will be employed equally with men, without discrimination as to wages, hours or working conditions.

The campaign to enlist women is the War Manpower Commission's answer to the question of how to supply workers for the continually expanding war plants in Norfolk and Portsmouth. While other war plants in the Hampton Roads region have a growing need for women workers, the campaign is aimed primarily at supplying the needs of the Navy. The Norfolk Navy Yard has announced it can use 7,500 women and other naval projects need thousands more.

Women enrolling for the courses will undergo a training period of from 150 to 300 hours, depending on the work for which the training is being taken.

~~Norfolk Virginia-Pilot-February 3~~

During the past two weeks (latter part of January) more than 1,000 have been signed up for immediate employment as helper-trainees or for job training. About 250 of these are Navy wives living in Benmorreal. Jobs or job training are available immediately for 15,000 women.

It's no fun to leave work and go to bed without a spot of recreation.

It's especially no fun in the Hampton Roads area where many thousands of men and women are working at night for the first time in their lives.

Commander R. E. Davenport, personnel officer at the Norfolk Navy Yard believes there is a direct relation between the lack of recreational facilities available to swing shift workers and a marked drop in production efficiency shown by this shift. About 30 per cent of the Yard's 42,800 employes are on the swing shift, which works from 3:20 p.m. to 11:20 p.m.

Less Efficient

"It is generally estimated," Commander Davenport said, "that the second shift is only 70 per cent as efficient as the day shift, and I believe this is attributable, at least in part, to the fact that employes on the night shifts are working while other people are playing.

"We get a considerable number of complaints from second shift workers who say there is nothing for them to do in the way of amusement either when they get through work or before they come on.

"Recreational facilities should be improved for these people," the officer asserted. "Improve recreation and you improve the efficiency of our war production."

The men workers don't like the swing shift, but most of them realize this war is being fought for keeps and "are resigned" to the situation. Women workers are cheerful about the whole thing and say they'll"make up for it after the war,"said a blonde and pretty 26-year old helper-trainee girl who came from Raleigh, N.C. to operate an automatic thread grinder.

In the Mare Island Navy Yard, San Francisco, there are about 6,000 women office and factory workers. The women are getting 3 days' induction program including a tour of the Navy Yard. A mechanical aptitude test is given; for some who do not pass the required standards, they are hired as laborers in the yard. Great care is exercised in placing the women in jobs most suited to their skills. They are reported as doing amazingly well on every conceivable type of work, and their production has exceeded anticipation. For example, in the shop manufacturing paint buckets, women were producing 800 more a day than the men formerly did.

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In one commercial shipyard on the Pacific Coast (other large companies beside this one are also employing women) there are already 1,000 women, most of them employed as welders, burners, shipfitters and laborers. In this yard the induction program is 4 hours long, and included instruction as to safety, company policies. This company has found that women require less supervision than men, and their output exceeds often that of men. They are being more readily accepted in the yard now that they have demonstrated they can do the work efficiently.

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The director of personnel in the Hoboken (N.J.) Todd shipyard made the following comments in a recent conference on women at work: The small woman is not necessarily frail. . . The way in which the first women applicants were handled had a bearing on later applicants. Careful explanation of the jobs and conditions were given even those who were turned down and these women passed along the word of what a job in the shipyard involved to their friends and relatives. The women usually had not the slightest idea what shipyard jobs were, and often were not suited for them but they were so well handled that they enthusiastically passed on the information they got to those who might be suited. There are women locomotive engineers (Diesel engine) and crane operators at Todd's . . . Todd's has a 3 months check-up on women's physical condition .. Todd's pay the same rates to women as to men . .. Todd's safety engineer gives a demonstration to women of weight lifting of various kinds of objects and makes them practice the best methods . . . The best woman welder in Todd's yard is a Negro, next best is a Cherokee Indian; at least 22 nationalities are represented among the 100 women in the yard ... Todd's has women on every job except those of skilled first-class mechanics - among others, as fireman, Diesel locomotive engineer, shipfitter, joiner, welder, burner, engineer wiper, drill press operator, machine shop . . . The question of safety is the same for men and women in shipyards; women's safety clothes are in fact men's clothes and they look just like men in them; no safety shoes are made for women yet, they have to wear men's.

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A report from our regional representative at Philadelphia states that in one shipyard no women were employed but it was anticipated they would be hired when weather permitted; in another there are about 550 women in production work and the number will be increased.

SHIPYARDS February 1943

The Conference Board Management Record gives the following data on earnings and hours in shipyards. November is the first month in which this type of information is available, since it was at this time that a substantial number of women were employed for the first time, in shipyards. In both months, November and December, average hours are longer, and average weekly earnings are higher in shipbuilding than in many of the other specified industries, although average hourly earnings are higher in the automobile industry. Aircraft is a close third in rank of earnings.

	November	December
Female average earnings hourly.....	.816	.856
Female average earnings weekly	37.70	38.01
Female hours per week	46.2	44.4

Miss Anderson has sent us a group picture of women tank scalers in a West Coast yard. The picture does not show the job conditions, although the hand tools, scaling hammers, and steel brushes are in evidence. These women were selected for this job because of their small stature which enables them to move more freely in and out of inner bottom sections. This is one of the jobs on which the suitability for women is being questioned.

Mr. Joseph Tone, of the Standards Division, has just returned from an extensive tour of the shipyards with a group from Great Britain, who are employed or closely connected with the labor conditions in the shipyards in that country. It is surprising to hear that the Britishers claimed that the women here in the shipyards are engaged in much heavier work, such as heavy welding and riveting, than in the shipyards of Great Britain. It would seem that this may be a reflection of the attitude of British Labour toward women in the shipyards rather than of fact, in view of the written reports which we have from Great Britain. Mr. Tone also repeated the rumor which Mrs. Wright said was current on the West Coast, to the effect that heavy welding causes sterility in women. Mr. Tone, as well as Mrs. Wright and others, thinks this is without any foundation. Yet, since it is current, he assures me the Bureau of Standards is going to make an investigation of the situation.

* * * *

A bulletin of January issued by the California State Chamber of Commerce has been filed with us from Region 12. It is entitled "Womanpower for California's War Production." It is evident that there is an effort being made to avoid the problems of in-migration by hiring women. The article stresses the various factors which must be considered in planning for the employment of women, and offers to furnish supplementary information on the various factors listed. Data on legal restrictions, supervision and discipline, selection and induction of women, have been in greatest demand.

Miss Anderson stopped in Chico, California, to speak before the Business and Professional Women's Clubs en route to Spokane. The lumber committee of the WLB requested her assistance in a job analysis in the match block plant of the Diamond Match Company.

Feb 1943

new page

(SF)

In the Mare Island Navy Yard there are about 6,000 women office and factory workers. The women are getting 3 days' induction program including a tour of the Navy Yard. A mechanical aptitude test is given; for some who do not pass the required standards, they are hired as laborers in the yard. Great care is exercised in placing the women in jobs most suited to their skills. They are reported as doing amazingly well on every conceivable type of work, and their production has exceeded anticipation. For example, in the shop manufacturing paint buckets, women were producing 800 more a day than the men formerly did.

from MK Anderson report

In one commercial shipyard ~~in the San Francisco Bay area~~ on the Pacific Coast (~~there are~~ other large ~~other~~ companies ~~employing women in this area~~ are also beside this one) there are already 1,000 women, most of them employed as welders, burners, shipfitters and laborers. In this yard the induction program is 4 hours long, and includes instruction as to safety, company policies, This company has found that women require less supervision than men, and their output exceeds often that of men. They are being more readily accepted in the yard now that they have demonstrated they can do the work efficiently.

The director of women personnel in the Hoboken (N.J.) Todd shipyard made the following comments in a recent conference on women at work: The small woman is not necessarily frail... The way in which the first women applicants were handled had a bearing on later applicants. Careful explanation of the jobs and conditions were given even those who were turned down and these women passed along the word of what a job in the shipyard involved to their friends and relatives. The women usually had not the slightest idea what shipyard jobs were, and often were not suited for them but they were so well handled that they enthusiastically passed on the information they got to those who might be suited. There are women locomotive engineers (Diesel engine) and crane operators at Todd's... Todd's has a 3 months check-up on women's physical condition... Todd's pay the same rates to women as to men... Todd's safety engineer gives a demonstration to women of weight lifting of various kinds of objects and makes them practice the best methods...The best woman welder in Todd's yard is a Negro, next best is a Cherokee Indian; at least 22 nationalities are represented among the 100 women in the yard... Todd's has women on every job except those of skilled first-class mechanics - among others, as fireman, Diesel locomotive engineer, shipfitter, joiner, welder, burner, enginer wiper, drill press operator, machine shop... The question of safety is the same for men and women in shipyards; women's safety clothes are in fact men's clothes and they look just like men in them; no safety shoes are made for women yet, they have to wear men's.

from Becky Smaltz report

A report from our regional representative at Philadelphia states that in one shipyard no women were employed, ~~but~~ in another there are about 550 women in production work and the number will be increased.

" "

but it was anticipated they would be hired when weather permitted;

February 6, 1943

Miss Beatrice Oppenheim
79-01 35th Avenue
Jackson Heights, New York

We wrote her Dec 17 '42 also

My dear Miss Oppenheim,

We have your request of February 2d to be brought up to date on news about women in shipyards, and we are sending various pieces of information which may be useful - none of it complete so far as being comprehensive but it is accurate for the instances given.

An estimate as to women employed in commercial shipyards by the end of 1942 might be placed at 23,000. This is not a Women's Bureau figure, so if you use it please do not quote us as the source.

You will find enclosed a small report from the Bureau of Labor Statistics on women in shipyards, based on a letter-form of inquiry to 13 companies. I am sorry we do not have our survey completed, as we are making an on-the-job survey of shipyards and eventually will have a rounded picture of woman employment in this field.

Sincerely yours,

Mary Anderson, Director

rfn

U. S. DEPARTMENT OF LABOR

WOMEN'S BUREAU

WASHINGTON

785 Market Street
San Francisco, California
July 8, 1943

WOMEN'S BUREAU
JUL 12 1943
DEPARTMENT OF LABOR

To: Mary Anderson, Director
Women's Bureau
U. S. Department of Labor
Washington, D. C.

From: Margaret Kay Anderson

Subject: Reply to memorandum regarding women in shipbuilding

Sometime ago a memorandum was sent out from the office asking different questions relative to the use of women in shipyards. I had intended to discuss these personally with someone while in Washington but did not get to that in the midst of the conferences so I will now reply in writing.

Sanitary facilities

Women working on the hulls and platens are not always close enough to shops to use the sanitary facilities in the shops. The very nature of shipbuilding is such that the workers are scattered over great areas thus making it necessary to disperse rest room facilities over a wide area. I cannot imagine any shipyard -- except for a very small one --- where one facility in the middle of the yard would be sufficient. Not only are the workers on the hulls and ships very often far removed from the shop rest room facilities, but they must frequently climb a considerable distance inside the ship before they ever get out.

As you will note in the Mare Island Navy Yard report, a complete survey had to be made of the number of women workers in the different areas of the Yard during different shifts to be able to determine what additional rest room facilities would be needed. The employment of women in certain areas of the Yard had to be delayed until rest room facilities were built because of the remote distance from the nearest rest room. Some of the women working on platens out in the open yards at Mare Island are able to use the facilitiesin the shops. But, again, there are others who are too far from the shops and special buildings have had to be constructed.

I would not think it particularly advisable to have the rest rooms apart from the toilet and wash room facilities.

Eating facilities

Where there is canteen service the workers must generally eat at their work benches or anywhere out in the shop or yard where they can find a place to sit down. The canteens generally serve great numbers of workers and no attempt has been made to seat them. The emphasis seems to be on mobile canteens in which case it is not exactly feasible to have a lunch room as a part of the canteen.

Women workers in shops other than burners and welders

I would not think it necessary for women in the electrical and machine shops of shipyards to wear any different clothing than in manufacturing shops in the electrical industry or in any machine shop.

There should be no stipulation that all workers must wear safety shoes and gloves. As a matter of fact gloves should be forbidden around moving machinery just like in any machine shop. Gloves should only be worn when handling sharp articles in the machine shop. Workers frequently shift around on different jobs in a machine shops of a shipyard so it might be well that they provide themselves with gloves in case they need them at some time, however, it cannot be a requirement for all work.

Safety shoes also are not necessary in many phases of shipbuilding although a higher proportion of the workers can wear safety shoes to advantage then in most industries because of the heaviness of so much of the work. There are many places such as the instrument shop, pattern shop, main electrical shop, rope loft, flag and sail loft, paint factory, sheet metal shop, etc. where safety shoes need not be worn. Mare Island stipulates that :"In all occupations where there is material to be handled of considerable weight, safety shoes or foot guards must be worn."

For work in the plate shops or shipfitting shops, and out on the hulls and ships there are the most instances of need for safety shoes, but even in these places there cannot be a blanket rule that all must wear safety shoes.

Welders

Somewhat of a distinction can be made in suitable clothing for different types of welding.

Spot welding: Spot welding, as defined in the Occupational Dictionary, is done on an electrical spot welding machine, and is an entirely different process than arc welding or gas welding. It is primarily a machine tending job and does not require the usual clothing for welding. The workers usually need to wear heavy gloves if they are handling the sheets of metal being welded. However, in some of the big aircraft plants visited the sheets of metal are now automatically rolled along on conveyors through the machine, and the women operators merely had to set the machine in operation and watch the spots from the welding to see that the metal was not being burned by having too strong current on.

Tack welding: Tack welding is the term used in describing the preliminary tacking of sheets of metal prior to the final seam welding, and can be done by arc welding, gas welding, or spot welding depending on what the seam weld is to be. Tack welding is the easiest type of welding to learn because merely a small spot has to be welded instead of laying in a solid bead of welding.

Hence, in considering clothing for tack welders you would recommend the same type of clothing as for regular arc welders if done by arc welding, gas welders if done by gas welding, or spot welders, if done by spot welding. Hence, the distinction in clothing is on the basis of arc, gas, and spot welding, and tack welding as such does not enter in as a factor.

Gas welding: In shipbuilding there is very little gas welding the great bulk of the welders being arc (electrical) welders. Gas welders do not need the same arm, leg and chest protection as do the arc welders. Goggles, however, must always be worn.

Arc welders: I have never seen a woman wear a bandana, helmet, safety hat, and welders goggles. However, I have seen them wear a bandana, a quilted cap to protect their head from the hood, goggles, and the welder's hood. The hoods have screens in them to protect the worker's eyes, but they generally wear goggles anyone so that when they push up their hood they will not get a flash from some near-by welder. In the welder's hoods that I have seen it would not be possible to wear a hard safety hat under or over the hood.

Some of the shipyards have had complaints from the women that all this head-gear is too hot, but they are told that all of this is necessary for safety purposes. The hair must be covered by a bandana so it will not catch fire. The quilted cap serves as a padding against the hard welder's hood. The goggles must be worn as a protection ~~from~~ flash from other welders. The hood must be worn to shield the entire face during welding.

arc Where the welders are shifted around on different types of/welding it would seem better for them all to be wearing leather jackets.

Mare Island Navy Yard

The booklet on safety rules and regulations for the Mare Island Navy Yard set forth the safety regulations quite well on matters such as shoes, gloves, hard hats, etc. This has already been submitted with the MINY report.

Richmond Shipyards

Attached are the clothing requirements for workers in the Kaiser Richmond yards which may be of some assistance.

Answers to memo
sent by B. H. re
regard to safety
clothes for special
jobs. - Plant Facilities
&c re Inland and plant

Valentine
Wright
Andrews
Zeigler & Harnish

May } £3
June }

From Martha Ziegler and F.Harnish
Atlanta, Ga.
June 5, 1943

In reply to Memorandum of May 14, requesting information from Bureau representatives who have been visiting shipyards:

1. When women work on the hulls or on the platens, are they close enough to the shops to have sanitary facilities in the shops sufficient for their use?

This all depends on the lay-out of the yard and how big it is. At the Alabama Drydock and Ship building Co. it would have b een too far away for facilities in the shops to serve the platens. They had some platens in between the ship-ways and they had some facilities there. (There were some other platens that could have been served by toilet rooms they were building in Fab. Shop.) There it would have been feasible to have same toilet rooms serve hulls and the platens.

At the Brunswick Shipbuilding Co. they had one toilet room that was going to serve all the platens, and were going to enlarge it. This room was too far away from the shop s.

At the Savannah Machine and Foundry Co. they could have used the same toilet rooms for the platens and the machine shop. This was a small yard and platens, shops, and ship-ways were not far apart.

At Pascagoula (Ingalls Shipbuilding) there were some toilet rooms out in the yard, near enough to serve the shops and platens, but a long distance from the hulls.

At a place as large as the Charleston Navy Yard there would have to be many toilet rooms throughout the yards, near the hulls, and in the several shops.

2. Have you visited any plant that had excellent arrangements? No.

3. When you have a cafeteria with canteen service, is it feasible to have a lunch room as a part of the canteen or must workers eat in their work room? It is desirable to have a lunch room where workers can eat away from work rooms, but not very feasible to ask for this. Frequently there have not been adequate arrangements for serving hot foods around the Yards. Either the facilities are too few, so that many of the workers cannot be served in the short lunch period, or the facilities are too distant from the place of work. Therefore, it seems more feasible to concentrate on securing adequate service of hot foods thruout the yards, rather than on the provision of lunch rooms where workers can eat.

Have heard of a company with headquarters in Chicago, called "Canteen Service, Inc." which is said to be running the food-services in many of the yards, including the Todd yards. Sometimes they put a few benches and tables in the room and sometimes they have just the food but no place to eat it. It might be well to write them and find out what they have found and what they are doing or not doing. They are supposed to be experts on shipyard food facilities.

4 Is it feasible to call for separate rest rooms apart from the toilet and wash room? Desirable but not feasible. In our region the toilet and wash room situation is still so unsatisfactory that it is more important to get this fixed-up first. Yards all speak of difficulty in getting money and materials for toilet and wash roo m facilities. Often long delays. On our second visit, we found that the Charleston Navy Yard is making some attempt to provide additional facilities, and is also thinking about some few rest-room facilities. We found a couch or cot in several of the women's wash rooms. In one building we found a room, separate from toilet, ~~and wash room~~, fixed up as a rest room, with a Bradley spray fountain for washing up, a coffee percolator, and one cot. Also the Navy Yd. had a cot in a few other places, either in washroom or in hall-way into wash room.

The ~~Charles~~ Savannah Quartermaster Depot said they had had a rest-room but thought women had "killed time there" and had given it up (they also needed the space). Several plants have mentioned to us the difficulty of keeping track of the workers (esp. when the places are large and workers move about at different kindsof work) and the fact that workers might use rest-rooms when they should be on the job. Some of them even have matrons in the toilet and wash rooms to prevent loitering.

5. Is it necessary for women in the electrical or the machine shop to wear any different clothing than they would wear in manufacturing shops in the electrical industry or in any machine shop? Think same type of clothing would be satisfactory. Certainly recommend coveralls or some type of slacks. Safety shoes in machine shop, and, unless working on very small parts, in electrical shop. Would recommend safety caps for those working around moving machinery, although we have not seen many in shipyard machine shops.

6. Can a distinction be made in safety clothing and equipment dependent upon the type of welding? Do spot or tack welders have to wear the same equipment as arc welders of large sheets or welders on the hulls? Since tack welding is like regular arc welding, except that the pieces are simply tacked together by the arc welding process temporarily, here and there, to hold them in place, it would seem that no distinction in clothing could be made. Tack welding may be done on the platens or in the Fab. shop or on the ships and it would depend on the danger in the p laces where the job was being done. It is probable that no special clothing is needed on spot welding, although we have not seen enough spot welding to have a right to a definite opinion. There would not seem to be the same hazards in spot welding, since the work is done on a machine, the worker placing the pieces to be joined between two points on the machine. The weld current is passed thru sheets that are to b e joined, at a spot or point of contact. There is a good picture of a spot welding machine in War Department Technical Manuel on Welding, pp. 82-83. Tack welding is done on large pieces, as well as small, whereas spot welding is probably more often used to weld light or fairly small pieces together (we saw the process in a room where wire screen was being made for ventilators--girls were placing cut screen into a border of thin sheet metal (folded over) and placing this between the points of the spot-welding machine so that the two sides of the border could be welded together in spots.) Of course, clothing would depend somewhat on what other work was going on in the room.

Where protective clothing is concerned it is important to consider the place where the work is being done as well as the work itself. A hard hat is probably desirable for workers in many places, because of the danger from falling objects (one of the commonest types of accidents in shipyards is from falling objects). In the Fab. shops, where large sections are often being assembled and where overhead cranes are in operation, as well as on the platens and the hulls, there is a danger of tools, etc., falling on workers from above. One girl we talked to in the Navy Yd. was most enthusiastic about the hard hat and said that but for the hard hat she would have had her head cut open by a falling monkey wrench that very day.

Also, welders are often in a "welding pool" and move around on different jobs in different sections of the yard and clothing that might be safe at one time might not be safe at another.

7. Has anyone seen a woman welder wearing a bandana, a helmet, a safety (hard) hat and welder's glasses? Can women stand this much head equipment in hot weather? At the Brunswick Marine Construction Co. (one of the Jones yards) the women were wearing hard hats and helmets and also, I think, bandanas, under the hat to make it fit. However, I was there in the winter. The chippers and burners had flash goggles but the welders did not have flash goggles, since they were hard to get, although it was admitted they were needed. The Safety Director seemed to think that not all of the welders needed hard hats--that it depended on whether theywere working in places where material might fall on them.

The Charleston Navy Yard said it was bothered about the terrible heat that is going to be common in the summer. We quote, also, a note we found in the Ch. Navy Yard news bulletin, "It seems that the heat is already getting some of the female tack-welders. One passed out from exhaustion the other day. Too much clothes, said the nurse at the dispensary." (This was dated April 9th)

The Brunswick Yard was also trying to find some fire-resistent woolen material for bandanas for those who did not need hard hats. There is a kind of glass-cloth that is non-inflammable. Could this be used for bandanas? Might be cooler than wool.

At the Steel Products Co., Savannah, Ga., we were told they were using a type of welder's helmet that covers the top of the head and the back of the neck and is fire-resisting. Unfortunately, we were told of this as we were leaving, and the workers were at lunch, and so we did not see it. If you wish, we can write this Co. for further information.

We had a report from the YWCA at Savannah that some of the girls living there, welders, reported that they were going to try to get on the night shift, to avoid the terrible heat of the summer. Unquestionably, the amount of clothing required by welders for safety is a terrific burden in hot weather. This is true not only of the head-covering, but of the jackets, etc.

8. Do you regard the welders as satisfactorily protected with a chest and arm shield or do you believe leather jackets are necessary?

What is your opinion about the steel tip shoe?

The stiffer the toe the better, as far as safety is concerned. Steel probably preferable to plastic.

Also, it might be mentioned that welders and burners should have shoes that come above the ankles. The Safety Director of the Alabama Shipbuilding and Drydock Co. reported that there were a great many accidents to women from ankle burns.

As for leather jackets vs. shoulder and arm shields:- Would not the type of work being done by the welder be the thing to be considered here? We think that in overhead welding there might be more danger from falling slag and that the leather jacket would be more of a protection than the shoulder and arm shields. Also, when welding in small spaces (for instance, where welders have to crawl thru small holes and weld in a section that is difficult to escape from quickly and where the flame might come in contact with clothing easily and set it on fire) the jacket would be necessary for overhead welding. If no overhead welding was being done in this small space, shoulder and arm shields might be sufficient, but the rest of the clothing ought to be flame-proof.

It seems to me that in the yards where I have been some of the women were wearing welding jackets and some were wearing shoulder and arm protection, but some were not wearing either (they had to buy their own).

It would be necessary for welders to wear the welder's gloves, in order to be able to do the work.

We notice in the General Electric Catalogue on Welding that flame-proofed aprons of light duck and flame-proofed sleevelets of light duck are mentioned. In the summer this would be cooler, but we wonder if it would give protection against falling slag? (Depends on the job again.) On most of this flame-proofed material, flame proofing has to be done after every laundering and this is not very practical.

In oneof the yards it was stated that welders and burners were required to wear coveralls without cuffs to keep hot slag from falling in.

The Safety Director of the Alabama Shipbuilding and Drydock Co. said he could reduce the accidents very greatly if hard hats, hard-toed shoes, and safety glasses or flash goggles were required. He said that 70% of all the accidents in his yard happened to the toes, heads, and eyes. At time of my visit there had been only one serious accident to a woman and she lost two toes. The Charleston Navy Yard reports that out of 80 accidents in April, 37 were due to head, foot and eye injuries.

When we come to Washington June 17 we should like to discuss the problem of flash goggles, for others than welders, and ask about how far away from flame one has to be to avoid flash burns, etc. We have found that workers and foremen disagree on this question in different yards.

U. S. DEPARTMENT OF LABOR
WOMEN'S BUREAU
WASHINGTON

294 Washington Street
Boston, Massachusetts
May 29, 1943

WOMEN'S BUREAU
MAY 31 1943
DEPARTMENT OF LABOR

To: Bertha Nienburg
Assistant Director

From: Frances W. Valentine
Regional Representative

Subject: Some Special Features of the New England Navy Yards Visited.

In looking back over the New England Navy Yards visited with relation to the provisions made for women workers, I would say that the outstanding lack is a lack of any place to eat their lunch and a lack of opportunity to purchase suitable food for lunch. In all the Yards visited which include Electric Boat, Boston Navy Yard, Portsmouth Navy Yard, Bath Iron Works and two small Yards, I would guess that the overwhelming majority of women workers brought their lunch with them and had no opportunity for hot food even in winter, except if they brought a thermos of hot coffee. A hot drink -coffee- was often procurable at little canteens. It was quite customary in all the undercover shops in the Yards to see long rows of lunch boxes stretching out hundreds of feet apparently left in trust that each owner would find his own box. In some Yards there had been considerable trouble with the men and occasionally the girls bringing liquor in in their lunch boxes. I do not think it had reached the proportions of a problem as far as women were concerned.

I think the Electric Boat Company probably had the best provisions for eating. They have well-equipped canteens all under the supervision of a trained dietician, and had small booth-like canteens scattered about through the Yard where workers could stop for hot coffee or sandwiches.

The Boston Navy Yard had a very large cafeteria which would not accommodate nearly all the workers if they wanted to go there. The food,I thought the day I ate there, was not particularly good, was rather expensive, and the contract was let out to someone with the food furnished and planned by the concessionaire.

The Bath Iron Works, although very fine in many of its features, had one very small canteen through which workers had to pass and get a plate of lunch, eat it outside somewhere, there being not even room to sit down in the building where the food was served. In most cases, therefore, the workers depended on the lunch boxes for their noon meal; as many of them had to leave home six and seven hours before the 12 o'clock lunch time it was too long a wait for their food and hard to carry an adequate meal in a lunch box. The same way at night. Many of them did not get home and get their evening meal until a long time after their noon lunch. I feel that the hard work done by the shipyard workers, often extremely cold weather, they certainly need more attention paid to their food.

Another thing that was not all to be desired many times was the restroom facilities. As we wrote in our report, the Navy Yard has a definite ruling against providing soap and towels so that some shops in some divisions have neither; some have one, some have both. In most instances they are at some distance from the place where the girls work. In a shop under cover where there is a rest room in that building they can reach it quickly, but those who work outside have a long way to go. At the Electric Boat they are particular to comply with the Connecticut law which requires rest rooms within three hundred yards of every worker. The Bath Iron Works, the rest rooms were far too small, the facilities too few except that at the new part of the plant where a new building a few years ago was built, suitable and adequate rest rooms had been installed. In some places there were couches where girls could lie down, others where there was scarcely room to stand up and move around.

It seems to me that this situation arises largely from the fact that the shipyards had no previous provisions for women. They have little room for expansion. When they began to take women in they had to use whatever space was available and crowd in some sort of building which met their immediate needs. Where they put up new buildings, adequate attention and space was given to the needs of the women. Lockers, wash basin, soap, towels, couches, and benches where they could eat their lunch were found. Neither factor contributing to what amounts to almost neglect of these features is that the emphasis has been, naturally enough, almost entirely on production and out-put. The other things that had to be done were done but people were not looking

around for ways they could improve the plant unless it definitely increased production. At least it seems to me that was what the management was doing.

As one always feels at the end of a study, I feel that I could go back now and give a much better picture of the shipyards from the point of view of the women workers. One other thing that I think struck both Mrs. Wright and me was that the protective goggles are seldom, if ever, worn by those working near welders as they are supposed to do. Going around myself in the plant I had to constantly shield my eyes against the glare from the welders' torches, but I saw no workers other than those actually performing operations wearing them. I think the one other thing , this is not connected with the actual work in Yards, I do not know who establishes the standards for safety shoes. Those I saw on exhibit at the Safety Council I consider definitely unsuitable for women workers in shipyards and machine shops because they have not a flat heel but a cuban heel which does not give stability in walking,or standing, nor normal position. Some of the girls at one of the shipyards, unable to get flat heel shoes, were buying boys ski boots for winter wear which were low, flat heeled and gave ankle protection. I have discussed this with several doctors and physical educators who do not think the cuban heel shoes are good. However, that medium heel is the kind they are giving the Waves. I do not see how they could march in them but they apparently are.

If there are any special matters which you would like covered besides what I have described here, I should be glad to do so.

Dictated but not read
FWV/gc

Miss Spring
your copies

May 1, 1943.

Miss Kathleen McLaughlin
The New York Times
Times Square
New York City, N.Y.

My dear Miss McLaughlin:

Here are the shipyard "high lights" from our schedules.

The enclosed data are exceppts from schedules on 26 yards on the Eastern Coast recently surveyed by the Women's Bureau. These are a part of a very extensive study now in progress and will eventually cover the Pacific Coast yards. A complete report on the employment of women in the Shipbuilding Industry will be published by the Women's Bureau.

The extent of employment of women in the many shipbuilding jobs varies greatly from yard to yard. There is no set pattern as to where the majority of the women employees will be found - in the shop, in the yard, on the boat itself (the three main divisions in over-all shipbuilding work). What is given in the attached story on one yard should not therefore be taken as necessarily representative for every shipyard employing women.

You may wish to use the following statistics, the latest there is:

In March, 1943 approximately 70,000 women were employed on productive work in shipyards; this includes the commercial and the Navy yards. In March, 1942, only about 2,500 were employed. The largest number of women are in the Pacific Coast yards.

Sincerely yours,

IAS
RFN
erb

Mary V. Robinson, Chief
Information Division.

encl.

I. Location - a shipyard on the North Atlantic Coast.

II. Product - Submarines - ships are completely fitted and finished here; certain parts as motors, engines, batteries are made elsewhere and installed here. Officers who are to command the submarines are stationed here during construction and know their ship literally inside out. (The first submarine machine shop was developed here by John Holland, "the father of submarines" in 1898.)

III. Number of women employed:
Over 500 on production.
About 300 clerical workers.
Expect by September 1943, to add about 2,500 yard workers, may have to be women.

IV. Requirements for employment and training.
"We hire workers, not men nor women, married or single (do not go into that) colored or white." All inexperienced are sent to State vocational school and are paid 70 cents an hour and have an 8-hour day. Welders get 250 hours training; machinists, sheet metal workers, and ship-fitters get 144 hours.

V. Turnover, less than 1 percent but are constantly trying to reduce it.

Absenteeism - About one-half of what it is for the industry as a whole. Try to investigate excuses. Every effort is made to keep up production. Posters and large signs made by the man who did the New York Central Station murals are about the yard. A large submarine marked "For Hirohito" is outlined on a board in the yard and the hours of absenteeism are being marked off, so that when enough hours have been lost to complete a submarine, they consider they have built a submarine for the Jap. At the head of each ways, there is a large sign marking the progress of building that ship. The progress each week is marked up. A figure representing "Uncle Sam" is at the top. If progress, is ahead of schedule, he is tipping his hat to the workers, if just on schedule, he is erect, if below schedule, he is frowning.

VI. Hours of Work. - The yard is on a round the clock schedule, 8 hours a day, 6 days per week. Nearly three-fourths of the women are on the first shift - 7.15 a. m. to 3.15 p. m. and less than 6 percent on the graveyard shift, from 11.15 p. m. - 7.15. a. m. When there is a rush of work as fitting and finishing a ship, women occasionally work 7 days. Whenever the women work over 48 hours, they have to get special pemission each time from State Labor Department.

VII. There is absolutely pay-for-the-job policy in the yard with no sex differential. All new learners are paid at the rate of 70 cents per hour for a probationary period of one work month, then in accordance with merit increased to not less than 75 cents per hour. The hourly rates for experienced women workers range according to the job, from helpers 91 cents and $1 to welders $1.11, $1.20, $1.27.

VIII. Women's jobs. This company has three yards each one repeating the activities of the other. This is so that as much water frontage as possible can be utilized and the ways may be accessible to the shops and yards getting out work for the ships. Women are working in all three yards - chiefly in the machine shops, sheet metal shops, ship fitting department and as electrician's helpers.

About one-fifth of the women on production are burners and welders in various departments both tack welding and welding of various parts.

60 girls were in the "Outside Electrician's" department making the hangers for putting up the wires and cables, assemblying various parts, and helping to install the wiring in the ships.

In ship-fitting, girls work as helpers to lay-out men and also make templates of paste board to fit certain parts of the ship after it is on the ways.

Riggers - several women work in the loft sewing canvas for various covers.

Machine shops - nearly 40 percent of the girls in the machine shops are working on inspection (using micrometers) and on hand assembly work. They are also working on drill presses, gear cutting machines, on milling machines, lathes, turret lathes, and one girl is doing an excellent job on an engine lathe, turning bevel gears and of course there are tool crib attendants.

Sheet metal shop - Here the girls are helping the men lay out the work on sheet metals from templates, are operating presses fabricating sheet metal cooking pans, and galvanized metal ventilating boxes, etc. They are also doing welding in this department.

Foundry - women are used here now only in the tool room, giving out tools. They will be employed as core-makers and as pipe-fitters' helpers soon.

Mold loft. - Two women are employed here making final tracings on cloth of the final pencil drawings of parts, etc., from which all blueprints are made. The foreman said the girls had been very satisfactory, did excellent work and were taking over more and more all the time.

IX. Safety Clothing. - Women are not required to wear a uniform costume but are required to wear clothing meeting safety requirements:

Hair must be completely confined by a cap - no bandannas, scarfs, nets, or snoods while working at or near moving machinery or in the vicinity of welding operation. Dark blue caps of acceptable type may be purchased from the matrons for 72 cents each. Leather aviators' helmets are recommended for welders.

Shoes of sturdy material, low heels, closed toes.
No jewelry.
Goggles must be worn wherever danger to eyes from welding arcs of flying particles of metal

Either one-piece cover-alls or two-piece slack and shirt outfits of suitable material - dark blue denim and twill seem most suitable - sweaters, jackets, or coats may not be worn over work clothes. Short cuffless sleeves preferred for working near moving machinery.

Regulations for Work on Boats.

Long coats may not be worn on boats; hip length jackets are acceptable.

Hard helmets and gloves must be worn at all times, hair should be completely covered by helmet.

Shoes covering ankles - boys' or men's shoes are recommended - in no case narrow, or high heels.

Welders have to buy leather jackets and trousers, (cost $16); are furnished helmets, goggles, and gloves by company.

X. Medical facilities - Women have preemployment examination. A splendidly equipped hospital at each of three yards. Nurses on 24-hour duty, and company doctor.

XI. Food Service - Food provisions within the yards are very good - a canteen serves complete hot meal for 50 cents. Also have numerous food booths at points convenient for both inside and outside workers; serving coffee, sandwiches, soft drinks.

XII. General Comments - General working conditions throughout the yard seemed excellent; rest rooms and toilet facilities were adequate and clean. There was an unusual amount of interest in the welfare and morale of the workers.

General plant practices for women productive employees in the Women's Bureau Eastern Coast Ship-yard Survey

Pay for the job - no sex differential; 7 percent increase over base rate for second and third shift.

In over one-half the yards, women work on three shifts; however two-thirds or more of the total women force are on the first shift, and usually 10 percent or less on the "graveyard."

Lunch period of at least 30 minutes.

Work week of 6-8-48 (Two yards employed women 7 days, and 1 - 5 days.)

No regulation for uniforms, but special type of safety clothing. Goggles where needed, hair completely covered, heavy flat heeled shoes, with covered toes, no jewelry.

Description of safety clothing worn by women in three establishments.

Plant No. 8

Uniforms recently adopted - dark blue onepiece coverall, ($4.00) snaps at ankles so can be fitted tight for certain jobs; long tight sleeves - some bought other clothing previously and are allowed to wear it. Some workers had several layers of clothing as well as long underwear under coveralls - working in the open. Hard hats are provided when needed; all workers on ways and platens wearing these. Welders must furnish own jackets ($10.00) and gloves ($2.00). Welders asked to wear boots covering ankles. Shoes with reinforced toes are required. Difficult to get all the desirable equipment. Safety engineer says he doesn't believe hard hats necessary on all burning and welding jobs. Company is trying to get some type of standard wool head covering.

Plant No. 10

No uniform required but "suitable clothing" of slacks or coveralls - cuffless coveralls, jumperalls or slacks with flat hip pockets are required. Blouses with sleeves, close fitting at wrists (if full length) and with sleeves without reinforcing (if short lengths) kept tucked inside at waist. Shoes with medium or low heels and closed toes. Safety shoes with reinforced vamps are recommended where weighty material is handled. Wooden soles are recommended where acids or conditions of excessive moisture and heat exist. Berets, caps, turbans, nets or kerchiefs with snug but not tight fit are required and must confine the hair completely. If brimmed or visor must be of non-inflammable material and stiff enough to act as a warning when striking machinery. If of net must be closely woven. Gloves when necessary, and of washable, non-irritating, non-inflammable material.

Goggles required where necessary, i. e., grinding, chipping, welding, scaling, riveting, drilling at high levels, machining rough cuts, and while handling molten metals or chemicals in open containers. Company provides welder's goggles - Few goggles seen except on cutters. Women in structural shop welding wear shields but no goggles. Goggles are received only a few hundred at a time when they have thousands on order. The cup type goggles which they have, so limit vision, that they are a hazard on scaffolding and no spectacle type goggles are available.

Plant No. 17

Not required to wear uniforms, but must wear safety clothing suited to the job. Slacks for those in the yard. Hair covered - heavy hair net and various kinds of caps. Wearing two kinds of suits - tan butcher boy type jacket, open in front, and slightly fitted, with a peplum in back covering the hips; short sleeves - made of medium khaki or denim; slacks - legs narrowed at bottom. The other is dark blue coverall with narrow belt and long sleeves - medium denim, visor cap. Flat heeled, closed toe, heavy shoes. Free gloves where needed. Welder's shield planned by company - two pieces of heavy canvas and stitched in or quilted between are pieces of imitation leather to keep heat from face. In a slot about size to cover eyes are put 3 pieces of glass - 1 colored and 2 plain to keep heat from eyes. This slot has a glove button on it, so glass can be removed and put in. This is used when there is not enough room for usual welder's shield. Knee pads also provided, made of imitation leather, padded with a cotton or wool mixture, padding made on the order of football knee pads. (No women welders as yet).

Goggles furnished when needed.

Description of the "yards" and "ships" in selected shipyards.

Plant No. 18 (Poor conditions)

On the boats in outfitting docks, "many workers were crowded on each boat (in fact some question has been raised as to whether there are too many workers on each boat). There is an appearance of general confusion and walking must be done carefully, even on the top decks because of the many pipes and valves which are found on a tanker. Also, on boats it is very likely to be true that welders' lines are strewn around everywhere. Climbing up and down long ladders is required to get into the fuel tanks to do welding and to do various other types of work in the boats. For a time the ladders are temporary wooden structures.

Plant No. 22 (Good conditions)

This is the most compact yard that agent has seen, and if there are railroad tracks, they are on the outskirts of the yard and not where the workers are going about. There is not the activity in this yard that has been seen in the other yards. There are some cranes, but these are very near the ships or in the shop, whereas in other yards they are about in many places in the yard. Much of the yard is hard surfaced and so there is not the dust when the wind blows. Roads are wide and well laid out. There is not so much material in the yard, and this is neatly stacked.

The shops are small and as a great part of the work is done on the ships, the shops seem rather inactive. The shops are neat and orderly with wide aisles. The workers are well placed and there was no crowding. As agent observed, the machines seemed well guarded, and noticed no unsafe machine.

Plant No. 23. (Good conditions)

There is much activity in this yard, many railroad tracks, switching cars back and forth, and the vehicular traffic that goes with a busy yard. In addition to this traffic, there are numerous cranes with their heavy overhead loads. (At time agent was in the yard it was very windy, a crane took a large piece of steel up, but had to put it down again, as the wind was blowing it so hard that moving it was too dangerous.) There is no boundary line for pedestrian and vehicular traffic but all are taught to observe safety rules and so the danger is lessened. The roads are wide and well laid out.

This yard is not hard surfaced and as the ground is bare it was dusty and especially so when the wind blew. Material is stacked over the yard in orderly fashion.

Shops are new and patterned after like shops in other yards of company; seem to be well planned and are not crowded. Aisles are wide and not obstructed. No slippery floors seen.

INDUCTION OF WOMEN IN AN ATLANTIC COAST Shipyard

(Notes from Women's Bureau Schedules)

The induction of the women in shipyards seems to have been made very carefully in some instances. In one comapny women have been employed but two months. This shipyard has a long tradition in shipbuilding and employing many of the same families who have grown up in shipyard work. In hiring women, preference is given to relatives of the men employed. This yard has a waiting list of thousands of women applicants. The Company made every effort to build up confidence in the women by giving them equal pay for equal work, as they felt it would be poor psychology to pay them less than men. It would make them feel inferior to the men and they would think that they were not expected to do as well as the men. The women were put at once on men's complicated jobs purposely, as the Company feels that if women were given the menial jobs it would give them an inferiority complex. Also as menial jobs are easiest to fill, they are therefore using women to their utmost abilities, following the above policy.

The Company has promised all men that if a woman takes over a man's job he will be given an equally good or better job with the result that the men have spared neither time nor effort in training the women. Otherwise it would have been very hard for the women to learn the work. Jobs of Negro men are given only to Negro women.

The Company has not been in a hurry to train women as welders as when they begin they will necessarily be given the lighter welding tasks, those on which men make the most money through piece work. The Company is very conservative and women are not on the ships as they consider the holds too big, too far removed with too many pitfalls on the ships. They are very proud of the fact that men have shown no resentment to the women, who for the most part, are wives, daughters and other relatives of the men already employed in the yards. This is one of the largest yards reported to date by Women's Bureau agent.

A smaller yard in another port reports that they tried not to make an issue of the employment of women, and their men have been exceptionally understanding and their attitude and reaction has been very good. The men are willing to stop and explain the work in detail, giving the women the benefit of all they know about her job. They have been very particular to hire a high type of women.

MISCELLANEOUS EXCERPTS FROM SCHEDULES

Crane operators. In a company where women operate overhead cranes from 30 to 100 ton (inside) and expects soon to put girls on transverse cranes in the yard. In this company the following comment was made by an official:

> "We have had girls on cranes for about 6 weeks. They are doing very well. There seems to be something about it that is particularly adaptable to women. They are very careful - not so fast, but that will come in time. The average time taken to train a girl on crane operating is 4 weeks, but one of our best was trained in 4 days. After 4 days, the man came down and said she can do as well as I can. There's nothing more to teach her, and from then on she has operated alone. A crane operator needs to have average intelligence and an even temperament - couldn't use a person who is nervous or scared."

Comment of official in another yard -

> "I believe the best workers we have are the young married girls with husbands in the armed forces. They have no home and they keep right after it." He also said an especially good worker is a former textile mill worker. "She never stops, never complains, and you wouldn't know she was in the shop."

General plant practices in women employees
Eastern Coast Ship-yard survey.

Pay for the job- no sex differential: 7½
Overtime over base rate for 2nd & 3d shift
In over one-half the yards, women work in
three shifts. However two-thirds or more of
the total women force are in the 1st shift
and usually 10% or less in the "graveyard".

Lunch period of at least 30 min.

Work week of 6-8-48: (two yards
employed women 7 days, and 1-5 days)

No regulation uniform but special type of
safety clothing, goggles where needed,
hair completely covered, heavy flat soled
shoes, with covered toes, no jewelry.

Misc. excerpts from schedule

5 14

in a company where

Crane operators. in [illegible] women operate overhead cranes from 30 to 100 ton cranes (usually [illegible] 50 ton to 100 ton) [illegible] girls on transverse cranes in the yard.

The following comment was made by a foreman: "We have had girls on cranes for about 6 wks. They are doing very well. Time seems to be [illegible] about it that is particularly adaptable to women. They are very careful. - not so fast but that will come in time. The average time taken to train a girl on crane operating is 4 wks - but one of our best was trained in 4 days. After 4 days the man came down and said, she can do as well as I can. There's nothing more to teach her." And from then on she has operated alone. A crane operator needs to have average intelligence and an even temperament - couldn't use a person who is nervous or scared."

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Description of safety clothing worn by women in their establishments.

Copy from subject VII working Cardstar

#8

#10

add note on goggles

#17

add. note on goggles

Description of the "yards" + "shops" in selected shipyards.
(Copy from page 2 of "Plant Hour Survey")

#18. (poor conditions)

#22 (good conditions)

#23 (good conditions) Omit. 1st paragraph
Begin. There is much activity.

Omit. last sentence

U. S. DEPARTMENT OF LABOR
WOMEN'S BUREAU
WASHINGTON

WOMEN'S BUREAU
APR 15 1943
DEPARTMENT OF LA

294 Washington Street
Boston, Massachusetts

April 13, 1943

Miss Bertha Nienberg
Women's Bureau
Department of Labor
Washington, D. C.

Dear Miss Nienberg:

In response to your inquiry, I shall try to summarize the situation regarding goggles.

At Walsh-Kaiser in Providence, at the Boston Navy Yard, and at the New England Shipbuilding Corporation in Portland, I was told that they had not been able to get the goggles they needed. This was given as the reason for not making mandatory the wearing of goggles as set forth in the Minimum Requirements for Safety and Industrial Health. P. 26 S-8.1 requires the wearing of goggles by every employee exposed to hazard of eye injury and goes on to say that includes almost everyone except office workers. Goggles to supply anywhere near the numbers who should have them to comply with this paragraph are not available. Goggles are sold only to firms with priorities. Miss Valentine and I would have gladly worn goggles had any been available for our purchase.

Those employees with the greatest risk of eye injury are specified, and Sec. 8.4 makes mandatory the wearing of anti-flash goggles of at least No. 2-5 shade by all employees working in proximity to arc-welding operations.

Sec. 9.23 p. 27 reads, "Personal protection equipment used by welders shall include hardened and filter lens protective goggles with side shields to be worn under the hood for protection against harmful rays where the hood is raised and for protection against flying scale and chips."

Mr. Johnston, safety engineer for Walsh-Kaiser, said that he would like to have all workers specified wearing goggles, but could not get an adequate supply of goggles, nor could he get enough hard hats. The safety engineer at the South Boston yard said that they could not get delivery on the thousands of goggles they had on order, and under the circumstances, they could not insist on the wearing of goggles. Mr. Mullin at the New England Shipbuilding Corporation in South Portland told me that they were practically out of goggles. I learned from the American Optical Co. that of the 2,500 goggles he has on order, they were able to ship 50 last week and 50 this Monday. Workers are told that they should wear goggles, but no effective enforcement of such a requirement is possible unless there is an adequate supply.

Mr. John Roach is responsible for the safety provisions of the booklet referred to as is Mr. Phillip Drinker for the industrial health provisions.

He could probably be reached either through the Maritime Commission in Washington or at the office of Lt. Commander H. K. Sessions (MC), U. S. Maritime Commission, Jefferson Building, Philadelphia, which office handles matters in this area.

We learned that the Caso Shipbuilding Co. at Freeport, Maine has recently employed 10 women to work in the Yard in addition to 4 in the office, and a firm in Camden, Maine is also recently using women on production. The Camden Shipbuilding and Marine R. R. Co., Camden, Maine are also said to have women on production.

Yours very truly,

Marie M. Wright

Marie M. Wright
Associate Labor Economist

Re goggles

DEPARTMENT OF LABOR

I have noticed that some welders do not wear goggles under their helmets and also that practically no one except welders and burners wear goggles. I have not heard that inability to get goggles was a reason but I did not ask. I will write to Elec. Boat & Bath Iron & find out. I have had

No. 203

girls say when dashed about the flash & glare which they might get working next to welders that they couldn't see to do do their work if they had dark goggles on. There are, however, #2 goggles which protect but do not darken too much.

7405

Safety shoes are impossible to get now - fact steel toed womens shoes will begin to be on market in June.

M.M.Wright
May 17,1943

Memorandum Concerning Shipyards.

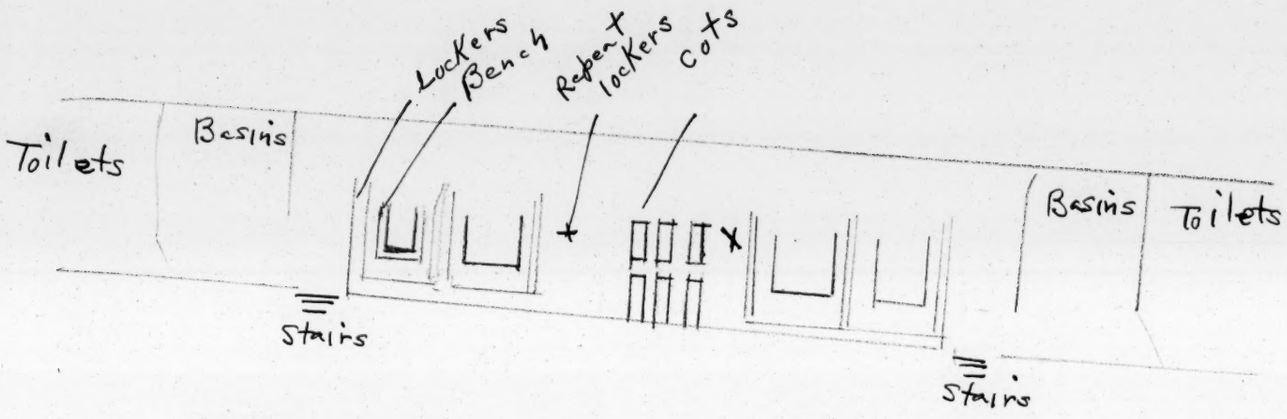
Work on the hulls, whether on the ways or at piers, is usually some distance from the shops. At Charlestown there are frame shacks used as offices on the piers which contain something in the way of sanitary facilities. At Hingham there are"head houses" for each pier.(Men only so I did not ask about facilities). I have not encountered the word platen and have no way to look it up. At Walsh Kaiser in Providence and and at S. Portland work on sub assembly of sections on platforms was ofetn very remote from any building. Miss Valentine said that Electric Boat at Groton complies with Conn. law that sanitary facilities must be within 300 ft. of the worker. The distance was much greater in the yards I visited except the Navy Yards where they had been very careful about their locations.

At a west coast yard I saw change houses for men just inside the various gates and near by the central hospital and the cafeteria. That seems to me a good arrangement if the work flares out from that center and small sanitary units are provided where needed. Just before I left Los Angeles the Los Angeles Shipbuilding Co., San Pedro, sent in a blueprint of their proposed sanitary facilities for production women. They were taking two former time keeper's shacks and setting them up in the middle of the area where they proposed to use women. There is no frost to bother plumbing there, of course.

Because of exposure to weather it seems especially important that workers have a chance to eat in a lunch room and if the lunch periods are staggered this is usually possible even where there are large numbers. Some firms seem reluctant to stagger lunch periods butit seems the only way to handle crowds.The best plan I have seen is a main cafeteria serving a full meal at one end and a snack bar at the other with tabels available from both ends. From the main cafeteria snack bars were supplied in other locations near which there were benches for eating. One was in a tent, one under an open shed.(Dougla s at Long Beach)Even when there are benches and cafeterias some workers prefer to eat in their work places but I think good management should discourage this or make it impossible.

Rest room needs for ship yard workers are the same as for any girls doing hard physical work. It is only the temporary nature of the enterprise that should lessen any requirements.

If there are separate first aid rooms for women in which a girl may lie down half an hour with cramps it seems to me not essential that there be another room with couches. (No ship yard first aid seen was separate for men and women).



Norris Stamping Co. would never recognize this!

Where there are only joint first aid rooms for men and women there should if possible be a rest room for women apart from the wash room and toilet. A good arrangement in one location at the Navy Yard in Charlestown was on a mezzanine in one of the shops, a large locker room(lockers consisting of racks with cubby hole lockers overhead similar to those I described as so successful at Waterbury Clock) a nd off the locker room a wash room with partitioned off toilet room beyond that. Also off the locker room was a small separate room conatining a couch with leatherette cover. A matron in attendance.

The rest room may be merely benches in the locker room or coat room. Considering the dirty nature of the work and the bulky clothing worn a wooden bench with a back wide enough and long enough to lie down on seems to me the most practicable arrangement to provide for sitting or reclining.

Where new installations are being made it seems to me that units might be installed something like the provisions at the Norris Stamping Co. in Los Angeles (100 to 200 girls). On the ground floor open to the shop aisle was a snack bar with tables and be nches where workers could eat and rest or just rest. On the mezzanine above were toilet, wash, and rest rooms. There was a stairw way at each end of the space. At the top of the stairs on one side you entered the wash room and beyond it the toilet room, on the other the locker room. The two locker rooms joined except for the rest room which was between them, a darkened room with six cots.The lockers were set up to form three sides of a square and in front of them three benches were fastened to the floor. These alcoves gave a degree of privacy and were reached without confusion by the corridor along the end. As I recall the rest room section was not partioned off but was quiet by reason of location.This firm makes shell cases. They did an about perfect job of putting in girls where none had worked before. They had excellent uniforms and caps which were sold on the premises at cost and no girl worked without them. The whole arrangement was thought through and three weeks after the first girl went in one hundred girls were working at noisy, heavy, hazardous jobs as if they had always been there. Excellent safety work also.

Electrical and machine shop workers in a ship yard need the same sort of clothing and protection as similar workers elsewhere and only that. How ever, shop women in the plate mill, the steel mill, the fab shop or whatever it is called definitely need more protection. They may be sheet metal workers or lay out or ship fitters or operating rolls or hydraulic presses, etc. They need steel toed shoes because the material handled is heavy and awkward. Lifting devices may let an end slip. The floor is also cluttered a nd piles of steel plates of varying heights have to be walked over. Bumping into objects was given as a predominant cause of accidents in one place. Flimsy uniforms would be bad and gloves are needed. Rather than have these women and weldesrs and burners go without steel toes I would say all ship yard workers must wear them. That has been the rule for men and should be for wome A plastic toe breaks under pressure. A steel toe bends and rebounds.

Welders

Spot welders need only the clothing and protection worn by any machine operator plus goggles if there is much sparking, tho this is debatable.

Acetylene welders and burners need a flame proof head covering and should have flame resistant blouse and apron. Both use a torch with which it is easy to set on fire a turban or hair (2 cases in one week at S. Portland) With the wear-what-you-please policy I have seen acetylene welders in flimsy cotton blouses and ruffled kitchen aprons. A leather apron with leg bands plus flame resistant blouse and head covering gives good protection. Goggles, of course. Leather helmets cut like the rubber bathing cap are good and so is the John Frederics design sold by Amer. Optical tho it is too small for a 23 head size. Both must be hot to wear.

The best cotton cap I have seen is held up about two inches above the forehad (where it completely covers the hair line) by a stiff band which is removable. The hair is completely covered. It can be comfortably worn under a welder's helmet. If flame proofed at each washing this should be satisfactory (Seen at Fore River where they had one for trial).

Since tack welders are usually, in the ship yards, beginnner arc welders who will go on to do other types than the flat welding which they do first they should wear the same protective equipment as any arc welder. (An acetylene welder may also do tack welding which simply means the initial fastening in place as in tacking in dress making).

Arc welders

The welders seen wore bandanas and the tilt type helmet over it. This is worn on top of the head when not needed for eye protection. A mod of the head drops it in place over the face leaving the top and back of the head unprotected. A few welders have been seen wearing goggles under the helmets and in the schools this is standard practice. The helmet is raised when the welder cleans off the slag by chipping with her hammer or brushing with a steel brush and particles are apt to fly into the eye. There is a lso the risk that one welder will raise her shield only to look into the arc of another worker. As I have reported, goggles are not worn as they should be. I ha ve seen no one wearing a safety hat in addition to the helmet and when I discussed this with one safety man he said there should be an additional hinge with an added piece to the helmet which would stay to protect the back of the head. It is possible that the skull protector referred to does the same thing. The welder working under other workers is very apt to have something drop on her head.

Leather sleeve and chest protectors are adequate except where welders are working near exch other and sparks from one may fall on the other. Apparently there is no satisfactory alternative to complete leather protection for this type of work and it should be required for both men and women. It is bound to be hot.

I see nothing to criticize in the Recommended Standards. I think they are entirely reasonable. Until there are more goggles and more hard hats available they cannot possibly be enforced but as I have said before I think an adequate supply of goggles for such work

should be provided at once. With cranes overhead in much of the area it is possible for metal to be dropped anywhere ina ship yard. The greatest danger, of course, is on scaffolding where other workers are overhead. The general use of impact resisting safety goggles with filter type lens of 2-5 with side shields would practically eliminate the flash burns now so common and also the foreogn bodies in the eye. These are the commonest complaints in first aid stations. The welder on a staging will not wear goggles with side shield which restrict his side vision but there must be some other type of goggle for this problem. I have not looked into that.Probably there are some with lenses on the side shields but I have not seen any.

M. Wright

Advisable Jobs for Women in Shipbuilding

Each New England shipyard visited had many jobs filled by men which women could hold satisfactorily. This varied with the local situation. Where oldish men were operating engraving machines girls were not considered for those jobs tho they have been proven expert at such work and the men might have had skill or strength beyond that of a girl to operate a more difficult machine. Where men painters have been plentiful girls were not used at painting but where they were used they were notably good. In Charlestown there was much enthusiasm about girls in the machine shop and in the structural shop they were acceptably used on the big rolls, hydraulic presses and shears which elsewhere were operated only by men. Charlestown was the only yard where girls were working in the mold loft though they seem well suited to work as helpers there. Sheet me tal work was the special success of women at Fore River where they were assembling vents with great skill. Women core makers were seen only at Portsmouth tho they were highly successful at the work.

Chipping requires the use of a gun weighing on the average 12 lbs. The weight of the gun, vibration, and noise make this an undesirable job and one which would seem to be a last choice for a woman.

Welding and burning on platform assembly of sub sections are well suited to the use of women. Rather few women were seen welding or burning on scaffolding but their use there was increasing. To work on staging is probably no more hazardous for a woman than for a man. Ability to climb is more an individual matter than one of sex. Pulling heavy hose and cable around on scaffolding is however definitely harder than on the ground or a low platform. The weight of the pull of a hose or cable is undoubtedly harder on a woman than on a man and should be limited for the same reasons a woman's weight lifting is limited. Phillip Drinker expressed himself as being strongly opposed to the use of women welders and burners on scaffolding because of the weight of pulling their equipment and as he said it is not fair to the men to take their time to help them as they have had to do in some cases.

Several safety engineers have expressed the feeling that women should not be allowed on scaffolding at all and not allowed in inner bottoms. We have here the same questionas in other hazardous processes. Is it any worse for a woman to be endangered by explosives than for a man? Is it any worse for a woman to risk cutting off her fingers than for a man? Is it any worse for a woman to risk a fall from a staging than for a man? I think it is only sentimentalism that says it is, but perhaps we should keep the tradition just as we have kept the one that women and children are first in a life boat.

Rivet passing is an example of work women are doing on scaffolding where they do not have heavy equipment. They are likely to fall if they reach too far for a rivet.

In practically all shops in the yards visited there were more jobs on which women can work than they were doing. It would seem wise to utilize women to the fullest possibility in shop jobs before using them in work aboard ship where difficulties of supervision are great and access to sanitary facilities a problem because of the time it takes to get off the boat even if facilities are near.However with adequate women supervisors and adequate allowance of time for personal needs work on board is quite possible and probably offers less opportunity for sequestered twosomes than does work on an airplane fuselage. Cleaning, electrical work, painting, and pipe covering can all be done by women. Where there is exposure to halowax it is the opinion of the Mass. Division of Industrial Occupational Hygiene that the hazards are no worse for a woman than for a man. For welding and burning in small enclosed enclosures where there is a lead hazard women should not be considered, I think, even if some say lead is no worse for women than for men. By eliminating the use of women welders and burners in small enclosed spaces there would be avoided problems of pulling heavy hose and air supply eqipment and any problems of working with men in unpleasantly close quarters.

SAFETY EQUIPMENT

MMW

I have been told at different shipyards that they cannot get the goggles they need, hard hats or women's steel-toed shoes. At the Safety Conference, I talked with salesmen from the American Optical Company and Wilson Products, both of whom said that goggles cannot be delivered in less than 12 weeks from the date of order. Only firms which placed orders well in advance of their needs are adequately supplied. The 5,000 goggles ordered three months ago for the Boston Navy Yard have not been delivered as agreed.

Materials for goggles used had to be changed on Government instruction. Nickel-silver frames are replaced by steel frames with a black coating which are less satisfactory and require changes in the manufacturing process. Changes required in rubber compounds made it almost impossible to mold the rubber frames used for some goggles. This requirement has recently been satisfactorily modified. The Wilson Products salesman said his plant in Pennsylvania often operates only two or three days a week because of shortage of materials.

I know that many workers who should be wearing goggles according to the standards set for the Navy and Maritime Commission are not doing so. If this is due to lack of protective equipment, it seems that something could and should be done about it. Safety lectures do limited good if a new employee cannot secure needed equipment. Each dispensary reports a great number of flash burns, not among welders who must be properly equipped in order to work, but among ship-fitters, helpers, and those near welders. Safety men have told me that these workers would not wear goggles because they cut their vision below that needed for their work. This I find need not be true. Safety lenses made by American Optical (calabar), Wilson (Wilsonite) and Bosch & Lomb all provide sufficient protection from infra red and ultra violet rays for anyone working near arc welding with even a very light shade of glass such as 1.5 which scarcely affects the vision of the wearer. This lens does not protect against glare. The reason for the progressively darker shades of glass required for welding is, I am told, to reduce glare to the point where the welder may look (~~work~~) continuously at his arc. While this is, no doubt, known to the authorities in each shipyard, it seems not to be understood by some safety workers and those issuing goggles.

look

Steel-toed shoes are the only safe shoes in a shipyard. The general use of the so-called safety shoe for women with a fiber or plastic box toe is excellent so far as it goes. For most jobs, a plastic toe gives adequate protection. Where the protection of steel is required for men as in shipyards, it should certainly be made available for women and at once. Information from a salesman, who says his company holds the patent under which all steel-toed shoes for women must be made, is that the first steel-toed shoes for women

will be available in 60 days and the supply will not begin to equal the demand because so few firms will be making them. The design, material and price are all specified by the Government.

OCCUPATIONS

SHIPYARDS - 1944

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UNITED STATES MARITIME COMMISSION

For Immediate Release
Friday, March 31, 1944

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Through Facilities of the
Office of War Information

Latest figures available, as of February, showed 582,342 workers in 37 major yards engaged in shipbuilding under Maritime Commission contracts, the Commission announced today. Included in this number were 64,028 trainees and 82,516 women.

The yard employing the greatest number was Bethlehem-Fairfield Shipyard, Inc., Baltimore, Md., with a total of 42,503 employees. During the months of December and January, these workers delivered 33 Liberty (EC-2 type) ships of 356,400 deadweight tons. Both in number of ships and tonnage these totals exceeded the entire output for 1939 by all Maritime Commission yards. The output in 1939 was 28 ships totaling 341,219 deadweight.tons.

Froemming Brothers, Inc., Milwaukee, Wis., was the smallest shipyard, in point of manpower, with a force of 1,181 persons. This company was engaged in building special type vessels for Navy use and delivered four such ships during the months of December and January.

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X-27633

First Women Shipscalers at Work In Los Angeles Harbor

LOS ANGELES (FP)—For the first time in the history of Los Angeles harbor, women are going to work aboard ships. They are going on as shipscalers, once known as man's work, now urgent war work open to all.

Waiting for necessary scaling and maintenance work before sailing with their war cargoes, ships were crowding the harbor in delays that might mean lost lives on some distant battlefront. To recruit the hundreds of urgently needed shipscalers, Local 65, International Longshoremen's & Warehousemen's Union (CIO), opened a new hiring hall and, breaking all traditions, urged women to take the jobs.

The hall, operated jointly by ILWU and two companies under contract with it, offered work at 95c to $1.25 an hour to men or women, with absolutely no race or national discrimination—but called for women especially.

All over the city appeals went out in Spanish and English. "It may be a little dirty at times," the union said, "but women will be willing to stand the dirt for the sake of getting ships ready to put to sea with what it takes for victory. Women need no skill other than what they have already through housework, and they need no physical strength. All a girl needs is a pair of old slacks and an old jacket, plus the ability and willingness to do a job."

Scalers' work is primarily cleaning, conditioning and finally loading the ship's stores before the cargo itself is put aboard by ILWU longshoremen.

The first women shipscalers — about 30 willing, able, good looking Negro and Mexican-American girls — boarded their ships early in March. "They haven't missed a day since," the union reported. "We're proud of them — and we need a lot more like them."



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OWI-2888 your copy

UNITED STATES MARITIME COMMISSION

For Immediate Release:
Saturday, January 22, 1944

Cleared and Issued
Through Facilities of the
Office of War Information

Covering the period when shipbuilding facilities and other resources of the nation were synchronized and enlarged to obtain construction of the largest possible number of ships, the annual report of the U. S. Maritime Commission was submitted to Congress today. It outlines the progressive steps taken during the fiscal year ending June 30, 1943, to achieve the greatest shipbuilding feats in history, the Commission said.

The expansion of shipyards during the period to a total of 81 with more than 300 ways made possible the unprecedented record of completing 1,896 vessels aggregating 19,238,626 deadweight tons during the calendar year just ended, the Commission said.

The report shows, among other things, that on July 1, 1942, the Maritime Commission had contracted for 2,540 ships and that a year later contracts for 3,326 vessels were outstanding, 1,397 having been completed in the meantime.

At the end of the fiscal year the American Merchant Marine totaled approximately 2,000 vessels of 2,400 deadweight tons or larger, an aggregate of 20,000,000 deadweight tons and an increase of nearly 50 per cent in the twelve-month.

Although construction centered mainly about the Liberty Ship, the "work-horse of the seas," which is carrying arms, food, and other supplies to our fighting fronts around the globe, there was no curtailment in the C-type and tanker programs. Such ships, intended not only for war service but also to be a nucleus of the post-war Merchant Marine, are being constructed under the mandate of Congress in the Merchant Marine Act of 1936.

By the end of the fiscal year 1943 plans were virtually complete for the new Victory Ship, faster than the Liberty, and the SS UNITED VICTORY, the first of more than 300 contracted for, was launched January 12 at Portland, Ore. The whole present tentative schedule is toward vessels faster than the Liberty, and a total of 1,100 Victorys, C-types, and fast tankers are scheduled for construction this year against 800 Libertys.

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February 18, 1944.

Mrs. Elinore M. Herrick
Director of Personnel and Labor Relations,
Todd Shipyards Corporation,
1 Broadway,
New York City, N. Y.

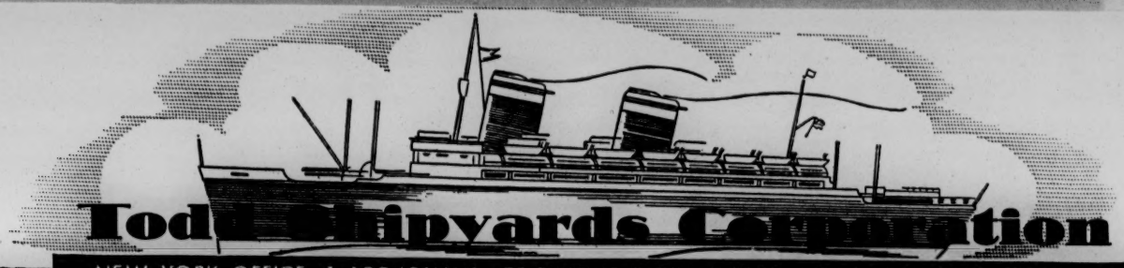
Dear Elinore:

The answer to your question about women in shipyards in the last war is Yes - and proof is enclosed. We also have a picture from those days of women in shipyard work.

Sincerely yours,

Mary Anderson, Director.

MA/RFN/nb



Todd Shipyards Corporation

NEW YORK OFFICE · 1 BROADWAY · TELEPHONE DIGBY 4-6900 · CABLE "ROBIN" NEW YORK

PLEASE ADDRESS YOUR REPLY TO

TODD SHIPYARDS CORPORATION
1 Broadway
New York 4, N. Y.
Digby 4-6900

TODD ERIE BASIN DRY DOCKS INC.
Foot of Dwight St.
Brooklyn 31, N. Y.
CUmberland 6-6820

TODD SHIPYARDS CORPORATION (HOBOKEN DIVISION)
Park Ave. & 17th St.
Hoboken, N. J.
HOboken 3-0700

TODD COMBUSTION EQUIPMENT, INC.
601 W. 26th St.
New York 1, N. Y.
BRyant 9-4725

TODD MOBILE DRY DOCKS INC.
Mobile, Ala.

TODD GALVESTON DRY DOCKS INC.
Galveston, Texas

HOUSTON SHIPBUILDING CORP.
Houston 1, Texas

SEATTLE-TACOMA SHIPBUILDING CORP.
Seattle 4 & Tacoma, Wash.

TODD SEATTLE DRY DOCKS, INC.
Seattle 4, Wash.

SOUTH PORTLAND DRY DOCK AND REPAIR COMPANY
South Portland 7, Me.

Affiliated Companies

TODD-JOHNSON DRY DOCKS INC.
New Orleans 3, La.

NEW ENGLAND SHIPBUILDING CORP.
South Portland 7, Me.

TODD-BATH IRON SHIPBUILDING CORP.
So. Portland 7, Me.

WOMEN'S BUREAU
FEB 16 1944
DEPARTMENT OF LABOR

February 14,1944

Miss Mary Anderson, Chief
WOMEN'S BUREAU, U.S.Dept. of Labor,
Washington, D.C.

Dear Mary:

I am back in New York at long last! And happy to be here, I may say.

I am doing a little report on our women shipyard workers. Can you tell whether any women were employed in this work in the USA during the last war? It is my recollection that there were none so employed. Hope this won't be a nuisance to you to check.

Affectionately yours,

Elinore

Elinore M. Herrick
Director of Personnel
and Labor Relations

Originals sent to XIII
Files - 5/22/44

May 15, 1944

TO: Miss Mary Anderson, Director
Women's Bureau
U. S. Department of Labor
Washington, 25, D. C.

FROM: Mary Alice Webb

SUBJECT: Pacific Coast Shipbuilding Stabalization Conference

Dear Miss Anderson:

Will continue this report from data as of May 4, which went to you on that date.

I went to see Mr. Lee Stoll, Area Director of War Manpower Commission, and he feels that we have sadly neglected the Portland area and was most insistent that I return to the Portland area as soon as possible.

He maintains stoutly that Portland can continue very productively on the eight-hour shift in shipyards. That there is no such shortage of manpower in that area as some government agencies declare. He told me that he authorized me to say to the boys at the Conference that Portland's production record per man hour is the best on the Coast and that at least 25 percent of the shipyard personnel in the area is composed of women and that neither he, his cohorts, or labor in the area would countenance a ten hour shift for women in shipyards. I tried to explain to him that the matter was squashed at least as far as this conference was concerned but was most glad to be able to quote him, etc.

At the meeting Friday morning Mr. Parker read the telegram of the National War Labor Board calling a hearing on the machinists' trouble and which included a recommendation that this conference take no stand which might prejudice the case. A recess was called until 10 o'clock Saturday morning.

Kaiser Company

Both Mrs. Kelley and Mrs. Preston, supervisors of women for Southern Pacific, came into town Friday morning to look over the Portland installations while I was in town to go with them. I arranged for them to be asked to the launching too, as I am making a valiant effort to

strengthen the prestige of their jobs in the eyes of the Southern Pacific.

A formal luncheon was served after the launching. Mr. Murray, industrial relations manager for the Kaiser Yards, introduced three Russian Officers who were present, a woman representing the Mayor of the town for which the ship was named, and myself. After the luncheon Miss Virginia Lemire, yard coordinator for all three Kaiser Yards, took Mrs. Preston, Mrs. Kelley, Mrs. Bartholomew (labor), and myself driving thru the three yards.

I was asked by both Mr. Murray and Mr. Randall, employee relations manager, to go thru their yards thoroughly on my return to Portland. They have 23,020 women now in the three yards. Miss Lemire is an exceedingly capable woman and has acheived some remarkable things in her yards. She is now making a complete absenteeism study and report and is going to give me the assembled data.

I am enclosing a booklet on the child care centers in the Kaiser Yards. I have never seen anything so remarkable. They are open 24 hours per day and are so advanced they actually beggar description. I will report more on them at a later date. I am anxious to get this to you now and start my Southern Pacific report. Each yard has a big cafeteria; the yards are well laid out, counsellors' shacks throughout yards, etc.

We were also taken through the famous Vanport housing center which normally houses about 40,000 people. Complete with post offices, parks, playgrounds, shopping centers, etc.

Personnel policies in Portland are unbelievably farther advanced than in Richmond.

Southern Pacific

Saturday I went to the Southern Pacific installations with Mrs. Kelley and Mrs. Preston. The yards in Portland have only a few women but the Portland Division as a whole has many. They are scattered around in Salem and Eugene and other towns, so I did not feel it was necessary to visit each installation as the work and the conditions under which it is done seem fairly similar in all installations.

I had talked to Commander Center and Mr. Ring Friday on whether they thought my presence would be necessary at the conference Saturday and they both said not, inasmuch as labor (off the record) had indicated their negative reaction to the physical examination and the matter of length of shifts was not to be brought up again. The Washington hearing of the N.L.B. on the machinists question just blew up the

MINUTES OF WORKING COMMITTEE

PACIFIC COAST SHIPBUILDING ZONE CONFERENCE BEGINNING JULY 12, 1943

RECONVENED PORTLAND MAY 1, 1944

- - - - - - - -

Session of Thursday Morning, May 4

In the absence of Mr. Porter, the meeting was called to order by the Vice Chairman for Government, Mr. Daniel S. Ring, at 10:25 a.m. The minutes of the session of the Working Committee on Wednesday afternoon, May 3, had been distributed.

The special order of business at this time was Item 15 on the Agenda, "Health, Safety, Sanitation and Feeding". It was moved by Mr. Crowe, seconded by Mr. Cameron and carried that consideration be given under Item 15 to a proposal to request the Army, Navy and Maritime Commission to issue written statements on their position on in-plant feeding.

On motion of Mr. Crowe it was agreed that consideration should be given under Item 15 to a proposal that the Government be requested to make funds available for locker rooms, toilets, and other facilities for employees.

With respect to another motion by Mr. Crowe, seconded by Mr. Hill, which would have provided for consideration under Item 15 of proposals to lessen the hazards of galvanized welding, and also to pay a premium rate of 25 cents per hour above the regular rate, a point of order was raised that it was not proper to consider the question of a premium rate under the item of Health, Safety, Sanitation and Feeding. After discussion, during which Mr. Gillard substituted for Mr. Meagher at the conference table, Mr. Robert Druhan for Mr. Gallant and Mr. Timothy Reardon for Mr. Sanfacon, Mr. Crowe withdrew this motion, on the understanding that the matter might properly be offered for the Agenda under Miscellaneous problems.

Mr. Sanfacon and Mr. Meagher again resumed their places at the conference table, and the Working Committee, on motion of Mr. Crowe, adopted the following resolution on in-plant feeding.

WHEREAS, Army, Navy and Maritime Commission have been directed to make money available for proper in-plant feeding facilities for shipyards and other work industries, and

WHEREAS, a written blueprint has been provided for the guidance of all concerned parties, but evidently is not sufficiently clear in instruction and direction for some of the parties, therefore, be it

RESOLVED, that the Army, Navy, Maritime Commission and if possible, the War Shipping Administration officials in attendance at the Conference issue written statements concerning this problem.

AND BE IT FURTHER RESOLVED, that Government, Management and Labor, pledge themselves to make every effort to institute in-plant feeding facilities in our Pacific Coast shipyards.

The Chair explained that only management and labor had cast votes on this motion, the Government representatives having abstained because they did not deem it appropriate to vote on a resolution which was directed to themselves.

Mr. Crowe then offered the following resolution on the subject of facilities for employees:

WHEREAS, the Pacific Coast Master Agreement provides that there shall be suitable quarters for employees to change their clothes and that such quarters shall be properly heated and ventilated, and further that suitable water shall be provided, and

WHEREAS, Government Agencies sat in and were part of the spirit of our Master Agreement, and are furnishing a major part of the money for plant facilities, and

WHEREAS, Management in many instances, when confronted with Labor demands for more and better facilities, complain that funds are not available,

THEREFORE, BE IT RESOLVED, that Government be requested to make money available for decent and adequate locker

room, dry room, drinking water and toilet facilities, and be it further

RESOLVED, that a combined Procurement Agency statement be issued to Management and Labor, outlining the procedure to be gone through, to bring about the guaranteed conditions as per our Master Agreement.

Mr. Morton asked that the record show that this was a bipartite proposal of management and labor only. Mr. Ring, as Government representative, prepared to surrender the chair to one of the vice chairmen representing the other parties; but when requested by both management and labor to remain in the chair, continued to preside.

On the vote being taken, the resolution on facilities was carried by the affirmative vote of both management and labor, the Government abstaining.

The Committee now took up the subject of preassignment examinations, a topic which had previously been discussed briefly at the session of the Working Committee on Tuesday afternoon, May 2. This matter, having to do with the Master Agreement, was also one in the disposition of which the Government could have no part; but, at the request of the parties, Mr. Ring continued to preside.

At the request of Mr. Morton, Miss Mary Webb, of the U. S. Department of Labor, was without objection given the privilege of the floor and made a statement on the problem under consideration, with special reference to women employees.

Attention was now called to an error on page 10 of the minutes of the session of the Working Committee of Tuesday afternoon, May 2. In the sixth line from the bottom of the page the word "amending" had been used where it should have read "so interpreting", while in the line immediately following the word "so" should have been omitted. The sentence should have read, "It was moved by Comdr. Hicks and seconded by Mr. Ring that management and labor give consideration to so interpreting Article II of the Master Agreement as to permit preassignment physical examinations. It was directed that the minutes of the Tuesday

afternoon session be corrected. The correction will be made on minutes hereafter given out.

Mr. Morton moved adoption of the following resolution:

> RESOLVED: That the phrase "There shall be no doctor's physical examination nor age limit, except as required by law", appearing in Section II of the Pacific Coast Master Agreement shall not, for the duration of the war, be so construed as to prohibit a physical examination, after employment, but before assignment to work, for the purpose of determining the type or nature of the work for which the employee is best fitted by reason of his or her physical condition.

This motion was seconded by Mr. Bergemann and discussed; but no action had been taken when, at 12:15 p.m., the Working Committee, on motion of Mr. Morton, recessed to reconvene at 5:00 o'clock in the afternoon.

MINUTES OF WORKING COMMITTEE

PACIFIC COAST SHIPBUILDING ZONE CONFERENCE BEGINNING JULY 12, 1943

RECONVENED PORTLAND MAY 1, 1944

- - - - - - - -

Session of Thursday Afternoon, May 4

The meeting was called to order by the Chairman, Mr. Porter, at 5:15 P.M.

At the time of the morning recess, the Working Committee had under consideration the resolution introduced by Mr. Morton with respect to preassignment physical examinations. It was moved by Mr. Crowe, seconded by Comdr. Hicks and carried that this matter be tabled so that the Working Committee could proceed at this time to determine what additional matters would be considered at this meeting under Item 18 of the Agenda, "Miscellaneous Problems".

Mr. Crowe proposed 15 subjects for consideration under this item in addition to the two matters which it had been agreed to place under this heading at the Wednesday afternoon session.

Of the 15 proposed subjects, three failed of adoption by the Committee as items for the Agenda: (1) Journeymen Pay for Dock Hands and Marine Waysmen; (2) Reclassification of Marine Waysmen and Dockmen on New Ship Construction; (3) Discussion on Administrative Instruction No. 15, Supplement A. In each of these cases, labor voted for inclusion of the item, management against inclusion. The Government abstained from voting in the case of the first two proposals because the subjects related to the Master Agreement in the third instance because the issue was one involving Government procedures.

Since proposal "1" had already been considered by the San Francisco meeting and rejected, the motion on this subject, as finally put and defeated, was a motion to reopen. In casting a vote of "no" on proposal "3", management made it clear that it did not vote thus because of satisfaction with Administrative Instructions 15 and Supplement A thereto, but because it was felt that this matter should not be gone into jointly with labor, but should be worked out between management and the Government.

The remaining 12 items proposed by Mr. Crowe were all placed under Item 18 without opposition, and will be found listed as items numbered 18-C through 18-N on the revised Agenda which is attached to these minutes.

It having been found that no member of the Committee was prepared to propose any other matter for inclusion under Item 18, except such matters as could readily be included under headings already on the Agenda, the Chairman declared that Item 18, "Miscellaneous Problems", now was closed.

On the motion made by Mr. Barthalomew, as amended by a motion made by Mr. Morton, it was agreed that consideration of Item II on the Agenda, "Ship Repair", which had been set as the special order of business immediately following consideration of Item 15, "Health, Safety, Sanitation and Feeding", should be deferred until Friday morning at 10:00 A.M.

At 4:20 P.m. the Working Committee, on motion made by Mr. King, recessed, to reconvene at 10:00 a.m. Friday, May 5.

AGENDA

Of Items to be Considered at the Portland

Meeting as Developed Through May 4, 1944.

I. New Ship Construction

4. Vacations, Holidays and Sick Leave

12. Clarification of Definition of Ship Repair and Ship Construction.

13. Line of Demarcation between Metal Trades and Building Trades in Shipyards.

15. Health, Safety, Sanitation and Feeding.

18. Miscellaneous Problems

A. Interpretation of National War Labor Board Order as respects the Pay and Classification of Teamsters.

B. Classification and Rate for Sign Painters

C. Premium Rate for Galvanized Welding and Burning.

D. Premium Rate for Sand Blasters

E. Premium Rate for Handling Creosoted Material.

F. Application of "Tank Time" to New Ship Construction.

G. Coastwise Rate for Maintenance Electricians.

H. Establishment of Apprenticeship Programs on Local Basis.

I. Interpretation of Footnote (1) of Schedule "A" of the Pacific Coast Master Agreement.

J. A Master Contract for Clerical Employees

K. Payment of Travel Expenses for Recruited Workers.

L. Reconciliation of War Labor Board Decisions with Master Agreement

M. Interpretation of Term "Weld Examiner" as Used in Master Agreement

N. Request for National A. F. of L. Shipbuilding Conference to consider an Overall Wage Increase.

II. Ship Repair

(Unnumbered Items)

Zone Panel

Premium Men

Announcement by Government Agencies on Administrative Instructions.

Length of Shifts.

COPY

SHIPBUILDING STABILIZATION COMMITTEE

ADMINISTRATIVE PROCEDURE MEMORANDUM NO. 5

(As amended March 18, 1944)

SUBJECT: Zone Standards Amendments

SECTION 1

The Zone Standards Agreements shall be altered or amended only by national or zone conferences called for such purpose or by referendum vote conducted as hereinafter provided.

SECTION 2

The Committee shall have no power to alter or amend the Zone Standards Agreements, but prior to submission to any national or zone conference, or to a referendum vote, the Committee shall consider all such recommendations and determine the manner of proceeding, shall be taken except upon authorization by the unanimous vote of the Committee.

No recommendations for alteration or amendment may become a part of the agenda of, nor be considered by a National or Zone Conference until such recommendations have been submitted to the Committee for its information.

SECTION 3

The procedure for conducting a referendum vote on the adoption of amendments to Zone Standards Agreements shall be determined by the Committee at the time of authorizing the conduct of the referendum.

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COPY

STATEMENT OF NAVY DEPARTMENT, WAR DEPARTMENT,

U.S. MARITIME COMMISSION AND WAR PRODUCTION

BOARD REGARDING ZONE PANEL

(1) If and when Management and Labor create joint machinery for the solution of any problem arising from the operation of the Master or Repair Agreement, the procurement agencies will make available to the above parties, when expressly sought, such advice and counsel as may be within their province to supply. This will be done with the understanding that their representatives are authorized to give definite answers as to matters of established policy but are restricted from making any new policy decision or commitments as to reimbursement, since a change is contemplated in the existing requirements or methods for securing approval for allowable costs.

(2) The principal aim of providing the above assistance will be to ensure prompt and uniform disposition of matters in controversy.

(3) When evaluating proposals to determine whether they should be approved for allowance of cost, the procurement agencies will give full consideration to the decisions reached by Management and Labor under the machinery they have set up.

MINUTES OF WORKING COMMITTEE

PACIFIC COAST SHIPBUILDING ZONE CONFERENCE BEGINNING JULY 12, 1943

RECONVENED PORTLAND MAY 1, 1944

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Session of Thursday Morning, May 4

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MINUTES OF WORKING COMMITTEE

PACIFIC COAST SHIPBUILDING ZONE CONFERENCE BEGINNING JULY 12, 1943

RECONVENED PORTLAND MAY 1, 1944

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Session of Thursday Afternoon, May 4

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Since proposal "1" had already been considered by the San Francisco meeting and rejected, the motion on this subject, as finally put and defeated, was a motion to reopen. In casting a vote of "no" on proposal "3", management made it clear that it did not vote thus because of satisfaction with Administrative Instructions 15 and Supplement A thereto, but because it was felt that this matter should not be gone into jointly with labor, but should be worked out between management and the Government.

The remaining 12 items proposed by Mr. Crowe were all placed under Item 18 without opposition, and will be found listed as items numbered 18-C through 18-N on the revised Agenda which is attached to these minutes.

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C. Premium Rate for Galvanized Welding and Burning.

D. Premium Rate for Sand Blasters

E. Premium Rate for Handling Creosoted Material.

F. Application of "Tank Time" to New Ship Construction.

G. Coastwise Rate for Maintenance Electricians.

H. Establishment of Apprenticeship Programs on Local Basis.

I. Interpretation of Footnote (1) of Schedule "A" of the Pacific Coast Master Agreement.

J. A Master Contract for Clerical Employees

K. Payment of Travel Expenses for Recruited Workers.

L. Reconciliation of War Labor Board Decisions with Master Agreement

M. Interpretation of Term "Weld Examiner" as Used in Master Agreement

N. Request for National A. F. of L. Shipbuilding Conference to consider an Overall Wage Increase.

II. Ship Repair

(Unnumbered Items)

Zone Panel

Premium Men

Announcement by Government Agencies on Administrative Instructions.

Length of Shifts.

COPY

SHIPBUILDING STABILIZATION COMMITTEE

ADMINISTRATIVE PROCEDURE MEMORANDUM NO. 5

(As amended March 18, 1944)

SUBJECT: Zone Standards Amendments

SECTION 1

The Zone Standards Agreements shall be altered or amended only by national or zone conferences called for such purpose or by referendum vote conducted as hereinafter provided.

SECTION 2

The Committee shall have no power to alter or amend the Zone Standards Agreements, but prior to submission to any national or zone conference, or to a referendum vote, the Committee shall consider all such recommendations and determine the manner of proceeding, shall be taken except upon authorization by the unanimous vote of the Committee.

No recommendations for alteration or amendment may become a part of the agenda of, nor be considered by a National or Zone Conference until such recommendations have been submitted to the Committee for its information.

SECTION 3

The procedure for conducting a referendum vote on the adoption of amendments to Zone Standards Agreements shall be determined by the Committee at the time of authorizing the conduct of the referendum.

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COPY

STATEMENT OF NAVY DEPARTMENT, WAR DEPARTMENT,

U.S. MARITIME COMMISSION AND WAR PRODUCTION

BOARD REGARDING ZONE PANEL

(1) If and when Management and Labor create joint machinery for the solution of any problem arising from the operation of the Master or Repair Agreement, the procurement agencies will make available to the above parties, when expressly sought, such advice and counsel as may be within their province to supply. This will be done with the understanding that their representatives are authorized to give definite answers as to matters of established policy but are restricted from making any new policy decision or commitments as to reimbursement, since a change is contemplated in the existing requirements or methods for securing approval for allowable costs.

(2) The principal aim of providing the above assistance will be to ensure prompt and uniform disposition of matters in controversy.

(3) When evaluating proposals to determine whether they should be approved for allowance of cost, the procurement agencies will give full consideration to the decisions reached by Management and Labor under the machinery they have set up.

COPY

Address Reply to
Division of Shore
Establishments and
Civilian Personnel

NAVY DEPARTMENT
Washington 25, D. C.

And Refer to
SECP:143.6:RMcB

7 August 1944

Miss Mary Anderson, Director
Women's Bureau
U. S. Department of Labor

Dear Miss Anderson:

Referring to your letter of 23 June 1944, there is attached herewith a table showing separations of men and women in navy yards and dry docks during May 1944. The higher separation rate among women may be affected by tenure of women empliyment and lower pay for women. On the other hand, the inclusion of women white-collar workers, whose separation rate is comparatively low, has a tendency to lower the separation rate for all women.

The Department has not assembled such data for other activities, but the following table will give you some idea of the female employment and the total separation rate for each type of activity of the naval shore establishments in the continental U. S. during May 1944:

Activity	Total Personnel	Men	Number of Women	Separations	Separation Rate
Total	652,468	469,069	183,399	36,814	5.6 %
Total Field	633,147	463,786	169,361	36,270	5.7
Navy Yards and Drydocks	343,715	283,299	60,416	18,023	5.2
Naval Air Stations	72,374	47,683	24,691	4,576	6.3
Procurement Activities	87,073	48,306	38,767	5,442	6.3
Ordnance Activities	54,990	38,528	16,462	3,081	5.6
Naval Operating Bases	9,461	7,024	2,437	686	7.2
Personnel Activities	21,539	11,392	10,147	1,338	6.3
Hospital Activities	9,041	4,167	4,880	730	8.1
Marine Corps (Field)	16,654	9,980	6,674	1,566	9.5
Coast Guard (Field)	5,800	4,797	1,003	207	3.6
All Other Field Activities	12,494	9,610	3,884	621	5.4
Total Dept'l (Washington, D. C.)	19,321	5,283	*14,038	544	2.9

The Navy Department will be glad to furnish you with any further information which you may need.

Sincerely yours,

*(Our assumption) FM/IS

(Signed) F. A. Crisp

F.G.Crisp
Rear Admiral, USN
Director, Division of Shore
Establishments and Civilian
Personnel

COPY

CIVILIAN PERSONNEL AND SEPARATIONS AT NAVY YARDS AND DRYDOCKS (By Sex)
May 1944

Yard	Personnel			Number of Separations			Separation Rate		
	Total	Men	Women	Total	Men	Women	Total	Men	Women
Total	343,715	283,299	60,415	18,023	13,965	4,058	5.2	4.9	6.7
Portsmouth	19,690	16,178	3,512	469	355	114	2.4	2.2	3.2
Boston	43,291	35,389	7,902	1,889	1,341	548	4.3	3.8	6.9
New York	67.671	59,795	7,876	2,478	2,160	318	3.7	3.6	4.0
Phila.	43,576	36,301	7,275	1,973	1,681	292	4.5	4.6	4.0
Washington	21,946	16,399	5,547	978	599	379	4.5	3.7	6.8
Norfolk	38,907	32,576	6,331	2,544	2,084	460	6.5	6.4	7.3
Charleston	25,208	20,203	5,005	1,909	1,541	368	7.6	7.6	7.4
Mare Island	34,436	26,360	8,076	2,187	1,533	654	6.3	5.8	8.1
Puget Sound	30,072	24,944	5,128	2,315	1,710	605	7.8	6.9	11.8
Naval Drydock Terminal Island	8,596	6,512	2,084	547	372	175	6.5	5.7	8.4
Naval Drydock Hunter's Point	10,322	8,642	1,680	734	589	145	7.2	6.8	6.7

OCCUPATIONS SHIPYARDS - 1945 - 1946

UNITED STATES DEPARTMENT OF LABOR
Frances Perkins, *Secretary*

BUREAU OF LABOR STATISTICS
Isador Lubin, *Commissioner* (on leave)
A. F. Hinrichs, *Acting Commissioner*

✦

Wartime Employment, Production, and Conditions of Work in Shipyards

Bulletin No. 824

For sale by the Superintendent of Documents, U. S. Government Printing Office
Washington 25, D. C. - Price 10 cents

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Letter of Transmittal

UNITED STATES DEPARTMENT OF LABOR,
BUREAU OF LABOR STATISTICS,
Washington, D. C., May 10, 1945.

The SECRETARY OF LABOR:

I have the honor to transmit herewith a comprehensive report covering wartime employment and production trends and conditions of work in American shipyards. This report was prepared in the Bureau's Division of Construction and Public Employment by Edward M. Gordon, Eleanor V. Kennedy, and Albert A. Belman, under the direction of Herman B. Byer. Miss Edna Fleckenstein compiled the bibliography.

A. F. HINRICHS, *Acting Commissioner.*

Hon. FRANCES PERKINS,
Secretary of Labor.

Bulletin No. 824 of the
United States Bureau of Labor Statistics

Wartime Employment, Production, and Conditions of Work in Shipyards

Employment

Trend, 1923–44

There were 90,000 workers in all United States shipyards in January 1923. Employment remained fairly constant during the next 8 years but started to decline in 1932. By April 1933 only 49,000 shipyard workers were employed. Under the authority of the National Industrial Recovery Act, an appropriation of $238,000,000 was made in 1933 for the construction of naval vessels. With this stimulus, employment in shipyards started to increase and rose almost steadily for the next 6 years, except for an interruption in 1938. Additional appropriations were made within this period for naval vessels, and a long-range merchant vessel program also was begun.

By June 1940, the beginning of the Defense Program, shipyard employment had increased to 168,000 and in December 1941 it stood at 556,000. After the attack on Pearl Harbor employment skyrocketed, more than doubling in 8 months and more than tripling in 18 months. Peak employment was reached in December 1943, just 2 years after the Nation's entry into the war, when 1,723,000 workers were employed in shipyards. Private shipyards reached peak employment (nearly 1,400,000) in November 1943, while the peak for United States navy yards (333,000) occurred earlier—in July 1943 (table 1).

After December 1943, total employment declined at the rate of an average of 22,300 workers per month, so that by December 1944, 1,454,000 workers were employed, or 268,000 less than at the peak. All but 7,000 of this decrease was in private shipyards, the remainder in United States navy yards.

Even though employment declined steadily during 1944, deliveries were greater than in 1943. The tonnage of new naval vessels delivered, not including conversions, was approximately 30 percent greater; and although the 1944 deliveries of merchant vessels were approximately 3,000,000 dead-weight tons (cargo-carrying capacity) less than in 1943, in number and actual weight of ships, 1944 deliveries were slightly higher than in the previous year.[1]

A high level of employment by itself cannot insure the delivery of scheduled vessels on time. Other factors such as changes in ship model or in the types of vessels to be built will impede progress in terms of tonnage delivered no matter how great the labor force.

[1] See p. 36.

Such changes, in fact, sometimes mean the temporary lay-off of workers until a yard is prepared for the new program, or the diverting of labor from ship construction to the remodeling of ways and dry-docks. This has been the case in yards that have recently changed over from the construction of Liberty to Victory ships. Economies made in man-hours and building-time requirements largely owing to construction of numbers of the same vessel cannot continue when major interruptions occur. The fact that shipyards have been able so nearly to meet Maritime Commission schedules since December 1943 in the face of declining employment is accounted for largely by increased yard efficiency and labor productivity resulting from experience gained in the exclusive construction of vessels of the same, or similar, type.

TABLE 1.—*Total Employment on Construction and Repair of Naval and Cargo Vessels, January 1923–December 1944*

[In thousands]

Month	All yards	Private shipyards	United States navy yards	All yards	Private shipyards	United States navy yards	All yards	Private shipyards	United States navy yards	All yards	Private shipyards	United States navy yards
	1923			1924			1925			1926		
January	90.9	68.5	22.4	81.7	62.3	19.4	77.4	56.4	21.0	77.7	56.2	21.5
February	89.3	68.4	20.9	83.9	64.4	19.5	79.2	58.0	21.2	79.7	58.2	21.5
March	93.6	73.2	20.4	82.8	63.2	19.6	80.4	59.1	21.3	80.4	58.6	21.8
April	93.1	73.2	19.9	81.2	61.5	19.7	81.6	60.1	21.5	79.3	57.1	22.2
May	90.2	70.9	19.3	74.9	55.1	19.8	79.5	57.9	21.6	79.0	56.9	22.1
June	90.1	71.3	18.8	74.6	54.7	19.9	76.9	55.1	21.8	78.5	56.5	22.0
July	87.8	68.9	18.9	73.5	53.4	20.1	77.3	55.5	21.8	78.6	56.4	22.2
August	84.6	65.6	19.0	69.5	50.3	19.2	75.3	53.5	21.8	78.0	55.7	22.3
September	82.6	63.5	19.1	69.1	48.7	20.4	73.0	51.2	21.8	79.0	56.6	22.4
October	83.8	64.6	19.2	70.5	50.0	20.5	71.3	49.4	21.9	79.2	57.2	22.0
November	84.9	65.7	19.2	71.5	50.8	20.7	72.3	50.4	21.9	82.1	61.0	21.1
December	83.3	64.0	19.3	73.7	52.8	20.9	74.9	53.0	21.9	86.7	65.6	21.1
	1927			1928			1929			1930		
January	87.1	66.2	20.9	71.9	51.1	20.8	76.8	53.8	23.0	91.2	69.1	22.1
February	89.6	68.7	20.9	68.7	48.3	20.4	76.9	54.0	22.9	90.4	68.7	21.7
March	89.7	69.0	20.7	66.8	46.8	20.0	81.2	57.9	23.3	89.1	67.6	21.5
April	88.0	67.3	20.7	67.5	47.6	19.9	85.6	61.7	23.9	89.7	68.5	21.2
May	85.5	64.6	20.9	67.3	47.3	20.0	86.0	62.1	23.9	87.1	66.1	21.0
June	83.2	62.3	20.9	67.1	46.8	20.3	85.8	61.5	24.3	86.6	65.4	21.2
July	79.6	58.3	21.3	67.3	45.9	21.4	86.5	61.5	25.0	83.9	62.5	21.4
August	77.5	55.7	21.8	67.2	44.8	22.4	84.8	60.2	24.6	84.4	62.8	21.6
September	74.9	53.7	21.2	67.6	44.9	22.7	85.0	60.6	24.4	83.8	62.3	21.5
October	73.7	52.8	20.9	68.4	45.7	22.7	84.4	60.7	23.7	81.3	60.4	20.9
November	72.9	52.1	20.8	70.5	47.3	23.2	86.8	63.5	23.3	77.6	56.5	21.1
December	73.4	52.8	20.6	74.8	51.6	23.2	89.1	66.2	22.9	77.8	56.6	21.2
	1931			1932			1933			1934		
January	76.1	55.6	20.5	65.8	45.0	20.8	54.5	32.9	21.6	62.1	40.0	22.1
February	74.4	53.3	21.1	66.0	45.0	21.0	52.5	31.0	21.5	63.1	41.2	21.9
March	72.8	51.4	21.4	65.2	44.4	20.8	51.0	29.3	21.7	64.9	43.3	21.6
April	74.3	52.7	21.6	66.5	45.6	20.9	49.3	27.1	22.2	66.1	44.7	21.4
May	73.4	51.2	22.2	64.6	43.6	21.0	52.6	28.9	23.7	67.0	45.8	21.2
June	73.1	50.8	22.3	63.3	42.2	21.1	53.6	29.3	24.3	69.1	48.1	21.0
July	70.2	48.7	21.5	59.2	38.3	20.9	55.2	31.9	23.3	64.8	44.1	20.7
August	65.6	45.0	20.6	56.8	36.0	20.8	58.3	35.1	23.2	65.9	45.4	20.5
September	66.0	45.7	20.3	55.8	34.8	21.0	62.2	39.2	23.0	65.8	45.5	20.3
October	65.7	45.0	20.7	55.4	34.2	21.2	63.2	40.4	22.8	65.9	45.8	20.1
November	68.2	46.8	21.4	55.3	33.8	21.5	61.6	39.1	22.5	64.4	44.6	19.8
December	68.2	46.9	21.3	55.7	33.8	21.9	63.8	41.5	22.3	64.1	44.5	19.6

TABLE 1.—*Total Employment on Construction and Repair of Naval and Cargo Vessels, January 1923–December 1944*—Continued

[In thousands]

Month	All yards	Private shipyards	United States navy yards	All yards	Private shipyards	United States navy yards	All yards	Private shipyards	United States navy yards	All yards	Private shipyards	United States navy yards
	1935			1936			1937			1938		
January	62.9	44.1	18.8	79.8	55.1	24.7	95.3	62.0	33.3	97.9	64.1	33.8
February	66.2	47.0	19.2	80.2	53.9	26.3	98.0	64.8	33.2	94.4	61.5	32.9
March	66.7	48.2	18.5	87.1	59.8	27.3	104.2	70.2	34.0	93.7	61.1	32.6
April	67.0	48.4	18.6	95.3	65.9	29.4	105.0	71.7	33.3	91.4	58.5	32.9
May	67.2	49.5	17.7	97.9	65.6	32.3	106.7	70.5	36.2	93.8	60.2	33.6
June	62.6	43.5	19.1	88.6	63.5	25.1	102.8	68.6	34.2	94.3	60.1	34.2
July	68.4	46.7	21.7	96.0	64.1	31.9	98.7	64.7	34.0	93.6	58.6	35.0
August	67.3	47.3	20.0	97.2	64.6	32.6	99.8	66.0	33.8	91.5	54.5	37.0
September	69.5	49.5	20.0	99.4	66.6	32.8	103.3	68.5	34.8	91.4	54.9	36.5
October	72.9	52.1	20.8	99.2	66.8	32.4	103.4	69.0	34.4	93.8	56.2	37.6
November	74.8	53.8	21.0	96.7	63.6	33.1	102.3	68.3	34.0	98.1	59.0	39.1
December	76.2	54.2	22.0	91.8	58.9	32.9	101.5	67.6	33.9	100.8	61.4	39.4

Month	Total, all yards	Private shipyards	United States navy yards	Total all yards	Private shipyards	United States navy yards	Total all yards	Private shipyards	United States navy yards
	1939			1940			1941		
January	101.6	61.7	39.9	137.2	79.4	57.8	255.5	147.7	107.8
February	105.7	65.2	40.5	141.6	82.4	59.2	270.3	158.3	112.0
March	108.8	66.4	42.4	148.7	87.2	61.5	288.9	168.8	120.1
April	113.7	68.6	45.1	151.7	88.9	62.8	304.3	183.2	121.1
May	117.3	72.1	45.2	158.5	93.2	65.3	317.1	192.1	125.0
June	121.4	74.3	47.1	168.0	97.2	70.8	342.1	209.3	132.8
July	119.6	73.6	46.0	177.3	102.5	74.8	380.0	233.9	146.1
August	120.1	71.8	48.3	190.3	109.2	81.1	410.1	258.9	151.2
September	127.6	76.2	51.4	201.5	114.3	87.2	425.5	274.3	151.2
October	131.8	79.0	52.8	215.5	119.2	96.3	468.7	307.7	161.0
November	132.7	78.5	54.2	230.4	124.2	106.2	505.8	331.8	174.0
December	138.5	82.3	56.2	242.3	134.9	107.4	556.1	366.4	189.7
	1942			1943			1944		
January	588.7	396.0	192.7	1,478.9	1,184.3	294.6	1,683.2	1,357.2	326.0
February	660.1	458.9	201.2	1,529.7	1,228.8	300.9	1,673.4	1,343.3	330.1
March	726.4	518.5	207.9	1,589.9	1,282.5	307.4	1,649.4	1,317.7	331.7
April	803.3	586.6	216.7	1,628.2	1,317.3	310.9	1,628.0	1,297.0	331.0
May	882.9	654.0	228.9	1,640.5	1,326.6	313.9	1,612.2	1,281.9	330.3
June	949.6	710.4	239.2	1,686.6	1,362.8	323.8	1,588.3	1,257.1	331.2
July	1,038.6	792.6	246.0	1,720.5	1,387.4	333.1	1,562.3	1,236.1	326.2
August	1,143.8	885.0	258.8	1,714.9	1,381.9	333.0	1,527.9	1,204.1	323.8
September	1,224.3	955.9	268.4	1,717.1	1,387.9	329.2	1,499.3	1,177.5	321.8
October	1,277.1	1,002.3	274.8	1,715.3	1,389.6	325.7	1,475.9	1,155.4	320.5
November	1,346.9	1,065.3	281.6	1,721.7	1,397.7	324.0	1,468.9	1,147.3	321.6
December	1,406.4	1,119.6	286.8	1,722.5	1,396.4	326.1	1,454.4	1,135.1	319.3

Geographic Distribution

Prior to the expansion of the industry during the defense and war periods, employment in shipyards was far greater along the Atlantic seaboard than in any other region, with concentrations in the New York, Philadelphia, Hampton Roads, Boston, and Baltimore areas. In January 1940, nearly 78 percent of all shipyard workers were on the Atlantic coast and 13 percent on the Pacific coast; the remaining

workers were scattered in Gulf, Great Lakes, and Inland yards.[2] In order to expand to war requirements it was necessary not only to develop established shipbuilding areas, but also to create new ones by building yards in some areas where shipbuilding had never before been part of the industrial picture.

Although Atlantic coast yards still lead in number of workers, the increase in employment in yards in all other regions has been proportionately much greater since 1940. Employment in Inland yards during the period January 1940 to July 1944, when the employment peak for the region was reached, increased more than 45 times—from 1,400 to 64,600 (table 2). From January 1940 to December 1943, employment in Gulf yards increased from 7,200 to 238,800, or 33 times. Pacific coast yards reached peak employment in July 1943, with 592,900 workers—32 times the January 1940 total of 18,400. In yards on the Atlantic coast the peak employment of 788,300 workers was reached in November 1943, and this was only somewhat more than seven times the January 1940 figure of 106,700.

TABLE 2.—*Total Employment on Construction and Repair of Naval and Cargo Vessels, by Shipbuilding Regions, June and December 1940–42 and January 1943–December 1944*[1]

[In thousands]

Year and month	Total, all regions	North Atlantic	South Atlantic	Gulf	Pacific	Great Lakes	Inland
1940: June	168.0	102.9	25.0	8.7	25.5	3.7	2.2
December	242.3	140.4	34.3	14.1	45.3	6.0	2.2
1941: June	342.1	192.9	48.5	19.7	70.4	8.0	2.6
December	556.1	276.5	66.8	40.4	155.9	12.8	3.7
1942: June	949.6	382.7	104.1	104.7	319.0	31.5	7.6
December	1,406.4	522.8	139.0	168.0	497.7	46.9	32.0
1943: January	1,478.9	544.2	141.8	180.8	525.2	49.9	37.0
February	1,529.7	565.9	145.0	190.6	536.3	53.0	38.9
March	1,589.9	585.6	148.7	199.3	558.0	57.6	40.7
April	1,628.2	600.1	152.1	209.0	565.4	59.4	42.2
May	1,640.5	605.5	155.5	216.8	558.9	60.3	43.5
June	1,686.6	614.3	158.1	226.8	579.4	63.1	44.9
July	1,720.5	624.0	158.2	231.6	592.9	65.8	48.0
August	1,714.9	630.0	153.1	231.3	587.8	66.1	46.6
September	1,717.1	634.3	152.1	232.0	582.7	66.4	49.6
October	1,715.3	634.4	152.7	232.9	577.5	66.6	51.2
November	1,721.7	634.5	153.8	235.5	579.8	65.9	52.2
December	1,722.5	629.6	154.2	238.8	580.7	65.6	53.6
1944: January	1,683.2	616.0	150.8	228.8	567.7	63.8	56.1
February	1,673.4	608.5	151.7	228.7	562.0	64.0	58.5
March	1,649.4	600.0	150.5	222.0	553.9	63.4	59.6
April	1,628.0	594.9	146.1	219.7	543.0	63.6	60.7
May	1,612.2	587.1	143.6	221.4	532.1	64.7	63.3
June	1,588.3	576.5	139.6	217.8	525.2	65.2	64.0
July	1,562.3	562.5	137.4	213.3	522.2	62.3	64.6
August	1,527.9	550.9	134.9	207.5	513.4	57.9	63.3
September	1,499.3	539.9	132.0	198.2	513.3	55.4	60.5
October	1,475.9	527.5	130.0	195.8	509.9	54.3	58.4
November	1,468.9	518.6	129.8	196.8	513.5	53.5	56.7
December	1,454.4	515.9	128.9	194.6	507.5	52.7	54.8

[1] Covers employment in private shipyards and United States navy yards. For comparable data for the period January 1940 to December 1942, see Employment in the Shipbuilding Industry, 1935–43, in Monthly Labor Review, May 1944, pp. 951–966 (reprinted as Serial No. R. 1648).

[2] The 3 coastal regions include all yards bordering on the Atlantic and Pacific oceans and the Gulf of Mexico. The dividing line between the Atlantic and Gulf regions is located a short distance north of the Georgia-Florida State line. Yards bordering on Lakes Michigan, Superior, Huron, and Erie are included in the Great Lakes region; while yards in the Ohio-Mississippi River Valley, excluding southern Louisiana and Mississippi, are included in the Inland region.

From data presented in table 3, it can be seen that although there were some very heavy concentrations of shipyard employment, nearly every major labor-market area along our entire coastline, on the Great Lakes, and on the larger rivers contributed to the shipbuilding effort. In December 1943, the peak month for the industry, there were 35 labor-market areas in which there were more than 5,000

TABLE 3.—*Total Employment on Construction and Repair of Naval and Cargo Vessels, by Shipbuilding Regions and Selected Labor-Market Areas, Selected Months, 1941–44*[1]

[In thousands]

Region and labor-market area	1941	1942	1943				1944			
	December	June	March	June	September	December	March	June	September	December
All areas	556.1	949.6	1,589.9	1,686.6	1,717.1	1,722.5	1,649.4	1,588.3	1,499.3	1,454.4
North Atlantic region	276.5	382.7	585.6	614.3	634.3	629.6	600.0	576.5	539.9	515.9
Baltimore, Md	27.0	46.8	73.8	74.5	75.5	75.7	68.5	60.7	55.2	54.6
Bath, Maine	5.6	8.8	12.4	12.4	12.2	11.9	11.6	10.9	10.1	9.5
Boston - Hingham - Quincy, Mass	47.1	58.8	102.1	107.1	108.9	105.1	101.1	93.4	86.7	83.8
Newark, N.J	29.5	38.6	55.2	66.5	71.2	70.9	67.8	66.7	62.2	57.1
New London-Groton, Conn	6.9	12.3	11.1	11.6	11.9	11.9	12.1	12.5	10.2	7.4
New York, N. Y	61.4	78.9	117.5	125.4	132.7	137.7	132.0	132.0	126.4	120.8
Philadelphia, Pa	75.2	89.8	127.9	130.4	129.2	126.6	122.5	115.7	111.3	110.0
Portland, Maine	8.5	19.7	28.0	26.3	26.0	22.8	22.7	23.3	19.4	18.2
Portsmouth, N. H	10.6	15.6	19.1	19.8	20.4	20.4	20.0	19.8	18.5	17.0
Providence, R. I	.3	1.4	12.0	12.8	17.1	19.2	18.6	18.4	18.5	20.2
Wilmington, Del	2.4	4.8	11.8	13.7	15.6	13.4	11.9	12.0	11.6	10.8
All other areas	2.0	7.2	14.7	13.8	13.6	14.0	11.2	11.1	9.8	6.5
South Atlantic region	66.8	104.1	148.7	158.1	152.1	154.2	150.5	139.6	132.0	128.9
Brunswick, Ga	.1	.4	7.8	12.4	14.3	15.6	15.3	14.7	14.3	14.1
Charleston, S. C	12.9	18.7	26.2	28.1	28.6	27.3	28.4	28.1	26.3	26.5
Hampton Roads, Va	49.0	69.1	76.1	75.3	71.7	72.9	70.5	64.3	60.4	58.5
Savannah, Ga	.1	2.9	16.1	20.4	20.0	21.5	19.6	17.5	16.8	16.4
Wilmington, N. C	4.3	12.0	20.9	20.4	16.1	15.6	15.5	14.0	13.3	12.8
All other areas	.4	1.0	1.6	1.5	1.4	1.3	1.2	1.0	.9	.6
Gulf region	40.4	104.7	199.3	226.8	232.0	238.8	222.0	217.8	198.2	194.6
Beaumont-Port Arthur-Orange, Tex	8.6	16.4	28.0	27.7	28.0	30.0	29.9	30.2	27.4	29.1
Houston, Tex	3.5	17.7	38.8	44.8	45.5	40.7	37.9	38.5	32.3	31.6
Jacksonville, Fla	1.2	2.0	14.1	17.0	18.5	20.3	18.1	17.2	17.3	17.4
Mobile, Ala	10.7	27.9	38.0	42.9	40.4	42.3	37.3	38.7	38.3	38.6
New Orleans, La	6.4	23.0	31.4	37.1	40.1	42.1	41.3	39.3	36.1	33.0
Panama City, Fla	.0	.1	10.4	14.6	14.7	15.6	14.5	13.5	10.1	11.6
Pascagoula, Miss	3.3	4.9	9.4	9.2	8.6	10.2	9.9	10.0	10.2	10.0
Tampa, Fla	3.2	5.7	15.6	19.5	21.6	22.3	20.9	18.3	17.2	15.2
All other areas	3.5	7.0	13.6	14.0	14.6	15.3	12.2	12.1	9.3	8.1
Pacific region	155.9	319.0	558.0	579.4	582.7	580.7	553.9	525.2	513.3	507.5
Los Angeles, Calif	24.2	65.0	86.0	93.2	100.1	102.6	102.1	97.6	98.5	97.2
Portland, Oreg.-Vancouver, Wash	19.3	44.9	115.8	121.4	120.9	125.0	113.3	109.6	112.2	114.8
San Francisco, Calif	71.7	130.2	237.4	241.8	241.9	238.0	225.7	208.1	203.7	201.5
Seattle-Tacoma-Bremerton, Wash	39.1	74.6	96.0	97.0	93.5	90.2	87.4	87.1	80.5	78.9
All other areas	1.6	4.3	22.8	26.0	26.3	24.9	25.4	22.8	18.4	15.1
Great Lakes region	12.8	31.5	57.6	63.1	66.4	65.6	63.4	65.2	55.4	52.7
Chicago, Ill	.6	1.1	6.5	6.7	8.0	7.9	8.1	7.9	7.0	5.7
Duluth, Minn. - Superior, Wis	.5	4.4	8.8	10.8	11.8	12.3	12.9	12.7	12.3	13.2
Manitowoc, Wis	2.5	5.8	7.2	7.0	6.9	6.8	7.0	7.1	4.8	4.3
Sturgeon Bay, Wis	1.1	3.2	5.5	6.0	6.2	6.6	6.5	6.2	5.4	5.3
All other areas	8.1	17.0	29.6	32.6	33.5	32.0	28.9	31.3	25.9	24.2
Inland region	3.7	7.6	40.7	44.9	49.6	53.6	59.6	64.0	60.5	54.8
Evansville, Ind	.0	1.1	12.6	13.3	13.2	13.3	13.6	16.2	16.6	15.8
Louisville, Ky.-Ind	.5	.9	7.0	6.0	6.0	6.6	7.5	8.8	10.1	8.5
Pittsburgh, Pa	1.4	2.3	16.4	20.7	22.1	23.1	23.6	25.2	22.7	21.2
All other areas	1.8	3.3	4.7	4.9	8.3	10.6	14.9	13.8	11.1	9.3

[1] Covers employment in private shipyards and United States navy yards.

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shipyard workers. One, the San Francisco area, had more than 200,000 workers; 6 had more than 100,000 workers—3 in the North Atlantic and 3 in the Pacific region. The largest concentrations were on the Pacific coast. In December 1943, nearly a third of all workers in the industry were in the four areas of greatest shipyard employment on the Pacific coast (San Francisco, Portland-Vancouver, Los Angeles, and Seattle-Tacoma-Bremerton), while only slightly over a fourth of all workers were in the top four areas on the Atlantic coast (Philadelphia, New York, Boston-Hingham-Quincy, and Hampton Roads). Mobile, Ala., with only 42,300 workers, held the largest shipyard-labor concentration in the Gulf region in December 1943, while Pittsburgh, Pa., with 23,100 shipyard workers, led all other Inland and Great Lakes areas.

Employment of Women

One of the most important developments in the shipbuilding industry during recent years has been the phenomenal increase in the employment of women wage earners. Although shipbuilding has always been considered a man's industry, the urgent need for workers to meet the greatly expanded wartime production program in a fast declining labor market necessitated the recruitment and training of women. Once on the job women quickly proved that they were capable and were soon found on production work of almost every kind. In March 1942, only a half of 1 percent of private-shipyard wage earners were women. By November 1944 the proportion had increased to 11.5 percent (table 4), the number of women wage earners being approximately 118,600. Although the peak in terms of actual female em-

TABLE 4.—*Ratio of Women to Total Wage Earners in Private Shipyards, by Shipbuilding Regions, January 1943–December 1944*[1]

Month and year	Percent women form of total wage earners in—					
	Total, all regions	Atlantic coast	Gulf coast	Pacific coast	Great Lakes	Inland
1943: January	3.7	2.0	4.2	5.7	1.5	1.7
February	4.4	2.6	4.8	6.6	1.6	2.1
March	4.8	3.1	5.1	7.0	1.6	2.3
April	5.5	3.4	5.4	8.3	1.8	2.6
May	5.9	3.9	5.6	8.9	2.2	3.5
June	7.0	4.4	5.6	11.1	4.5	4.6
July	7.9	5.1	6.1	12.1	4.5	7.0
August	8.7	5.2	6.4	13.9	5.2	7.6
September	9.3	5.4	7.4	14.8	6.3	8.1
October	9.6	5.5	7.5	15.5	6.3	8.8
November	10.0	5.9	7.5	16.0	7.6	9.2
December	10.3	6.2	7.7	16.1	8.3	9.3
1944: January	9.9	6.2	7.5	15.5	5.9	9.9
February	10.0	6.3	7.4	15.6	5.7	10.4
March	10.3	6.7	8.1	15.8	6.1	11.0
April	10.6	6.9	8.2	16.1	6.8	12.1
May	10.9	7.2	8.3	16.6	7.2	12.7
June	11.0	7.0	8.0	17.3	7.3	12.4
July	10.9	6.7	8.0	17.1	6.9	13.0
August	11.1	6.9	8.1	17.6	5.3	12.9
September	11.4	6.8	8.8	17.8	5.1	13.8
October	11.4	6.7	8.6	17.9	5.8	14.2
November	11.5	6.7	8.9	17.8	6.5	14.3
December	11.3	6.8	8.6	17.3	6.0	14.3

[1] Excludes clerical personnel. Data by region not available prior to January 1943.

ployment was reached in December 1943 (129,500), the ratio of women to total wage earners at that time was only 10.3 percent, indicating that there was a greater proportional employment decrease for men than for women.

Yards on the Pacific coast have been employing women more extensively than yards in any other shipbuilding region. In December 1944, they had little more than a third of all the wage earners in private shipyards, but well over half of the women. Women made up 17.3 percent of their wage-earner force, as against 14.3 percent in the Inland region and only from 6 to 9 percent in the other regions. The distribution of women wage earners in private shipyards in December 1944, by shipbuilding regions, is as follows:

	Percentage distribution	
	All wage earners	*Female wage earners*
All regions	100.0	100.0
Atlantic coast	37.3	22.7
Gulf coast	17.5	13.2
Pacific coast	35.9	54.9
Great Lakes	4.8	2.0
Inland	4.5	7.2

The extent to which women have been employed in shipyards has varied considerably according to the major type of work performed in the yards. In December 1944 new-construction yards reported a wage-earner force of nearly 13 percent women, whereas repair yards reported but 3 percent. Nearly 15 percent of the wage earners in private yards constructing merchant vessels were women in December 1944, as compared with a little over 10 percent in yards constructing naval vessels. The difference between individual yards in the employment of women has also been great. As late as December 1944, almost half of the yards reporting employed no women wage earners, whereas in some yards more than a fourth of the force were women. It should be indicated, however, that the yards with no women on production employed only about 5 percent of all wage earners; yards with at least 15 percent women had over a fourth of the wage earners. The proportion of women wage earners to the total increases almost directly with the size of the yard (table 5).

TABLE 5.—*Percentage Distribution of Women Wage Earners in Private Shipyards, by Size of Yard, December 1944*

Size of yard	Number of yards	Wage earners		
		Total number	Women	
			Number	Percent
All yards	330	1,008,591	113,773	11.3
Under 500 wage earners	185	26,307	289	1.1
500 and under 1,000 wage earners	25	18,936	246	1.3
1,000 and under 2,000 wage earners	24	33,696	1,603	4.8
2,000 and under 3,000 wage earners	13	32,648	1,373	4.2
3,000 and under 5,000 wage earners	20	80,833	6,881	8.5
5,000 and under 10,000 wage earners	29	217,859	25,387	11.7
10,000 and under 20,000 wage earners	27	399,268	46,463	11.6
20,000 wage earners and over	7	199,044	31,531	15.8

Labor Turnover

Private Shipyards

Labor turnover in private shipyards was not a serious problem during the period immediately preceding the Defense Program, January 1937–June 1940. Accessions were low, frequently lower than separations, and usually no higher than the number necessary for replacements. Total separations, which were composed chiefly

TABLE 6.—*Labor-Turnover Rates (per 100 Employees) in Private Shipyards, January 1937–December 1944* [1]

Month and year	Accessions	Separations					
		Total	Quits	Discharges	Lay-offs	Military [2]	Miscellaneous [3]
1937: Annual rate [4]	47.3	53.6	16.0	2.7	34.9	----------	----------
January	3.7	3.0	.8	.3	1.9	----------	----------
February	4.2	5.5	.9	.5	4.1	----------	----------
March	5.9	3.5	2.1	.2	1.2	----------	----------
April	2.6	3.7	1.3	.3	2.1	----------	----------
May	6.2	6.9	1.7	.3	4.9	----------	----------
June	4.2	3.9	1.7	.2	2.0	----------	----------
July	4.8	3.5	1.2	.2	2.1	----------	----------
August	3.6	4.3	1.7	.3	2.3	----------	----------
September	4.5	5.2	1.8	.1	3.3	----------	----------
October	2.9	4.9	1.3	.1	3.5	----------	----------
November	2.1	3.0	.9	.1	2.0	----------	----------
December	2.6	6.2	.6	.1	5.5	----------	----------
1938: Annual rate [4]	42.4	45.1	9.3	1.4	34.4	----------	----------
January	1.8	2.5	.5	.2	1.8	----------	----------
February	2.3	3.6	.5	.1	3.0	----------	----------
March	2.3	3.0	.5	.1	2.4	----------	----------
April	2.1	5.6	1.4	.1	4.1	----------	----------
May	4.4	3.3	.9	.1	2.3	----------	----------
June	3.3	4.2	.8	.3	3.1	----------	----------
July	2.4	4.3	.6	(5)	3.7	----------	----------
August	2.2	5.9	.9	(5)	5.0	----------	----------
September	3.8	5.4	.9	.1	4.4	----------	----------
October	5.0	2.8	.7	.1	2.0	----------	----------
November	6.3	1.7	.9	.3	.5	----------	----------
December	6.5	2.8	.7	(5)	2.1	----------	----------
1939: Annual rate [4]	62.6	31.1	9.0	1.7	20.4	----------	----------
January	4.7	2.0	.5	.1	1.4	----------	----------
February	6.2	2.4	.7	.1	1.6	----------	----------
March	4.8	2.0	.7	.1	1.2	----------	----------
April	5.1	2.1	.7	.1	1.3	----------	----------
May	5.3	2.2	.6	.2	1.4	----------	----------
June	5.5	2.0	.6	.1	1.3	----------	----------
July	7.3	4.0	.7	.2	3.1	----------	----------
August	5.4	5.0	.8	.1	4.1	----------	----------
September	6.6	2.9	1.3	.2	1.4	----------	----------
October	4.8	3.0	1.0	.3	1.7	----------	----------
November	4.1	1.7	.7	.1	.9	----------	----------
December	2.8	1.8	.7	.1	1.0	----------	----------
1940: Annual rate [4]	103.5	68.7	14.0	3.6	48.9	----------	2.2
January	6.0	4.0	.7	.1	3.1	----------	.1
February	6.6	4.4	.7	.1	3.5	----------	.1
March	7.0	5.0	1.0	.3	3.6	----------	.1
April	6.2	8.1	1.2	.3	6.5	----------	.1
May	6.8	6.0	.9	.3	4.7	----------	.1
June	10.8	5.3	1.0	.3	3.9	----------	.1
July	13.0	5.4	1.1	.5	3.7	----------	.1
August	9.1	7.2	1.3	.4	5.4	----------	.1
September	10.0	6.1	1.5	.3	4.1	----------	.2
October	7.9	4.4	1.4	.4	2.4	----------	.2
November	7.8	5.3	1.3	.3	3.4	----------	.3
December	12.3	7.5	1.9	.3	4.6	----------	.7

See footnotes at end of table.

TABLE 6.—*Labor-Turnover Rates (per 100 Employees) in Private Shipyards, January 1937–December 1944*[1]—Continued

Month and year	Accessions	Separations					
		Total	Quits	Discharges	Lay-offs	Military[2]	Miscellaneous[3]
1941: Annual rate[4]	166.5	75.5	28.8	5.9	34.8	2.9	3.1
January	18.2	7.9	1.9	.4	4.8	.3	.5
February	11.0	6.1	1.8	.4	3.2	.4	.3
March	13.9	6.5	2.0	.4	3.5	.3	.3
April	14.3	7.8	2.5	.5	4.3	.3	.2
May	13.2	7.0	2.4	.5	3.6	.3	.2
June	12.1	6.0	2.3	.5	2.7	.2	.3
July	15.5	5.6	2.6	.6	2.1	.1	.2
August	12.1	5.1	2.3	.5	2.0	.1	.2
September	13.9	6.2	3.0	.6	2.2	.1	.3
October	14.6	6.0	2.7	.5	2.4	.2	.2
November	12.4	5.0	2.4	.4	1.9	.1	.2
December	15.3	6.3	2.9	.6	2.1	.5	.2
1942: Annual rate[4]	188.7	106.4	58.9	11.0	13.6	16.5	6.4
January	20.8	6.5	3.3	.7	1.4	.7	.4
February	16.7	6.3	3.3	.7	1.3	.6	.4
March	18.2	7.1	4.3	.7	1.2	.6	.3
April	16.4	7.3	4.3	.8	1.3	.7	.2
May	16.6	9.2	5.2	.9	1.4	.9	.8
June	17.4	9.4	5.7	.9	1.4	.9	.5
July	15.7	8.4	4.7	.8	1.2	1.1	.6
August	14.6	9.9	5.8	1.1	.9	1.6	.5
September	13.4	11.4	6.7	1.0	.8	2.4	.5
October	12.6	10.8	5.4	1.1	1.1	2.6	.6
November	14.5	10.6	5.4	1.2	.9	2.4	.7
December	11.8	9.5	4.8	1.1	.7	2.0	.9
1943: Annual rate[4]	132.7	119.3	78.1	18.7	6.8	14.4	1.3
January	14.3	10.9	7.0	1.5	.5	1.8	.1
February	13.0	9.7	5.9	1.3	.5	1.8	.2
March	13.7	10.9	7.1	1.5	.5	1.7	.1
April	12.2	9.9	6.3	1.4	.7	1.4	.1
May	11.2	9.4	6.3	1.4	.5	1.1	.1
June	11.9	9.3	6.2	1.5	.5	1.0	.1
July	10.8	10.5	6.9	1.8	.7	1.0	.1
August	10.7	11.3	7.7	1.9	.6	1.0	.1
September	10.6	10.5	7.3	1.7	.4	1.0	.1
October	9.0	9.7	6.2	1.7	.7	1.0	.1
November	8.7	8.3	5.3	1.5	.6	.8	.1
December	6.6	8.9	5.9	1.5	.6	.8	.1
1944: Annual rate[4]	93.0	114.2	74.4	22.2	9.9	7.4	.3
January	8.0	9.4	6.1	1.7	.7	.8	.1
February	7.0	8.5	5.5	1.6	.6	.7	.1
March	7.7	9.3	5.9	1.7	.7	.9	.1
April	7.3	8.9	5.7	1.7	.6	.9	(5)
May	8.0	9.9	6.3	1.9	.7	1.0	(5)
June	8.5	10.4	6.7	2.1	.9	.7	(5)
July	7.3	9.3	5.9	2.0	.8	.6	(5)
August	8.1	10.8	6.9	2.1	1.3	.5	(5)
September	7.9	10.3	7.1	1.9	.9	.4	(5)
October	8.4	9.5	6.4	1.8	1.0	.3	(5)
November	8.5	8.9	5.9	1.9	.8	.3	(5)
December	6.3	9.0	6.0	1.8	.9	.3	(5)

[1] Net gains or losses reflected in turnover rates presented in tables 6 and 7 are not strictly comparable with the trend in private shipyard employment from month to month as presented in table 1, because of differences in the composition of the samples upon which the two series are based. Moreover, employment figures for private shipyards are based on reports covering the midweek of the month, whereas labor-turnover rates are based on reports covering the whole month. Labor-turnover rates prior to 1943 are for all wage earners; after December 1942, for all employees.

[2] Not reported 1937 to 1939; 1940 included with miscellaneous.

[3] Prior to 1940, miscellaneous separations, covering deaths, permanent disabilities, and retirements, were included with quits.

[4] Annual rates are the sums of the monthly rates per 100 employees.

[5] Less than a tenth of 1 percent.

of lay-offs, were also low, never higher than 6.0 per 100 employees except in the months of May and December 1937 and April 1940 (table 6). In these 3 months lay-offs were exceptionally high, thus causing sharp increases in total separations. Quits, which during the war have been the most important component of all separations, ranged between 0.5 and 2.1 per 100 employees in most months from January 1937 to June 1940 and accounted for less than 35 percent of all separations.

Lay-offs, on the other hand, were considerably more important than quits throughout the 3½-year period, usually comprising over 60 percent and sometimes almost 90 percent of all separations. Lay-off rates ranged from 0.7 to 6.5 per 100 workers. The discharge rates were much more constant than quits or lay-offs and were never higher than 0.3 per 100 workers, except in February 1937 when the rate was 0.5 percent.

The beginning of the National Defense Program in June 1940 necessitated the speedy and wholesale recruitment of workers, and accessions increased sharply, the rate rising from 6.8 in May 1940 to a peak of 20.8 in January 1942. With the growing scarcity of the labor supply and increased efficiency in production and labor utilization, accessions tapered off during 1942 and 1943 and by 1944 had dropped to between 6.3 and 8.5 per 100 employees. Although accessions decreased they remained greater than separations until August 1943. Accessions again exceeded separations in September and November 1943 but during the months of October and December and each month through December 1944, dropped below separations.

Total separations did not vary greatly between June 1940 and April 1942, ranging from 4.4 to 7.9 per 100 employees. Immediately following April, however, the separation rate increased and in September 1942 was 11.4 per 100 employees. During 1943 and 1944, the rate fluctuated between 8.3 and 11.3.

The composition of separations changed with the enlargement of the shipbuilding program, and while lay-offs decreased in importance, quits increased both in number and in proportion to total separations. Quits in June 1940 averaged 1.0 per 100 employees and accounted for about 19 percent of all separations. By August 1943 the quit rate had reached 7.7 per 100 employees and accounted for 69 percent of all separations. Throughout 1943 and 1944, the proportion of quits to total separations remained between 60 and 70 percent. The high quit rates during the war are, after all, the accompaniment of a greatly expanded labor force, including those who would not ordinarily work for hire except if free to quit.[3]

Lay-offs are those terminations initiated by the employer without prejudice to the worker. During the war lay-offs have occurred for such reasons as lack of contracts or materials, conversion of plant, and release of temporary help. As the need for war matériel increased and the recruitment of labor for war-time shipbuilding was intensified, lay-offs decreased. During the period January 1941 to September 1943 the lay-off rate dropped from 4.8 to 0.4 per 100 workers and the proportion of lay-offs to total separations decreased from more than 61 percent to less than 1 percent. As employment reached peak and started to decline in the latter part of 1943 in private shipyards, lay-

[3] See p. 14.

offs increased slightly and in December 1944 were 0.9 per 100 employees, about 10 percent of total separations. This change in trend may be attributed largely to contract terminations and cut-backs.

Discharges prior to January 1942 tended to fluctuate less than other separations and to be significantly lower than lay-offs and quits. Beginning with January 1942, however, the discharge rate increased gradually, till it reached 2.1 per 100 workers in June 1944 as compared with 0.7 in early 1942. The rate was 1.8 in December 1944. The proportion of discharges to total separations increased during this period from nearly 11 percent to 20 percent.

TABLE 7.—*Labor-Turnover Rates (per 100 Employees) in Private Shipyards, by Shipbuilding Region, January 1943–December 1944* [1]

Region, month, and year	Accessions	Separations					
		Total	Quits	Discharges	Lay-offs	Military	Miscellaneous
Atlantic coast							
1943: Annual rate [2]	103.4	89.8	52.9	16.3	5.1	14.8	0.7
January	10.7	7.2	3.4	1.5	.3	2.0	(3)
February	10.5	7.3	3.8	1.2	.6	1.7	(4)
March	11.4	8.0	4.3	1.3	.5	1.8	.1
April	10.3	7.6	4.1	1.4	.6	1.4	.1
May	8.8	7.5	4.6	1.2	.6	1.1	(4)
June	9.5	7.1	4.5	1.3	.3	1.0	(4)
July	8.1	7.8	4.7	1.5	.5	1.0	.1
August	8.3	8.9	5.8	1.7	.3	1.1	(4)
September	8.2	8.0	5.1	1.5	.2	1.1	.1
October	6.7	7.4	4.4	1.3	.5	1.1	.1
November	6.2	6.4	4.0	1.2	.3	.8	.1
December	4.7	6.6	4.2	1.2	.4	.7	.1
1944: Annual rate [2]	62.0	86.9	55.0	16.7	8.1	6.9	.2
January	5.9	7.2	4.7	1.3	.4	.7	.1
February	4.8	6.1	3.8	1.2	.4	.6	.1
March	5.2	7.2	4.2	1.3	.8	.9	(4)
April	5.3	6.6	4.1	1.3	.4	.8	(4)
May	5.0	7.8	4.7	1.4	.6	1.1	(4)
June	5.5	8.6	5.1	1.6	1.1	.8	(4)
July	4.5	7.1	4.4	1.5	.6	.6	(4)
August	5.2	7.6	5.1	1.7	.4	.4	(4)
September	4.8	7.7	5.2	1.[illegible]	.7	.3	(4)
October	5.3	7.5	4.5	1.4	1.3	.3	(4)
November	6.0	6.4	4.3	1.3	.6	.2	(4)
December	4.5	7.1	4.9	1.2	.8	.2	(4)
Gulf coast							
1943: Annual rate [2]	165.1	139.6	91.6	25.7	7.2	14.3	.8
January	20.2	12.4	7.8	1.9	.8	1.9	(3)
February	15.2	11.2	7.6	1.7	.3	1.5	.1
March	17.6	12.4	8.4	2.1	.5	1.3	.1
April	14.8	10.3	6.6	1.7	.6	1.3	.1
May	14.1	10.3	6.6	2.1	.5	1.1	(4)
June	13.9	11.6	7.8	2.1	.5	1.1	.1
July	13.3	13.1	9.2	2.3	.4	1.1	.1
August	13.1	13.8	9.6	2.3	.8	1.0	.1
September	13.3	12.4	8.3	2.6	.3	1.1	.1
October	11.2	10.9	6.2	2.5	1.1	1.0	.1
November	10.6	9.1	5.2	2.4	.5	1.0	(4)
December	7.8	12.1	8.3	2.0	.9	.9	(4)
1944: Annual rate [2]	115.4	131.0	85.0	30.3	6.6	8.7	.4
January	11.1	10.1	6.2	2.3	.6	.9	.1
February	8.8	10.6	6.9	2.1	.6	.9	.1
March	10.0	10.5	7.0	2.0	.3	1.1	.1
April	9.7	10.2	6.3	2.1	.6	1.1	.1
May	10.9	11.3	7.3	2.4	.5	1.1	(4)
June	10.2	12.4	8.3	2.7	.6	.8	(4)
July	9.4	11.5	7.3	3.0	.6	.6	(4)
August	9.1	12.3	8.1	3.1	.5	.6	(4)
September	8.5	12.0	8.2	2.8	.6	.4	(4)
October	9.6	10.0	6.9	2.3	.4	.4	(4)
November	10.8	9.6	6.1	2.7	.4	.4	(4)
December	7.3	10.5	6.4	2.8	.9	.4	(4)

See footnotes at end of table.

TABLE 7.—*Labor-Turnover Rates (per 100 Employees) in Private Shipyards, by Shipbuilding Region, January 1943–December 1944* [1]—Continued

Region, month, and year	Accessions	Separations					
		Total	Quits	Discharges	Layoffs	Military	Miscellaneous
Pacific coast							
1943: Annual rate [2]	146.8	142.5	100.3	18.8	8.1	14.9	.4
January	14.0	12.7	9.0	1.3	.5	1.9	(3)
February	14.5	11.5	7.7	1.3	.5	1.9	.1
March	13.9	13.3	9.4	1.3	.7	1.9	(4)
April	12.9	12.2	8.6	1.4	.6	1.6	(4)
May	12.8	11.7	8.6	1.4	.5	1.2	(4)
June	14.1	11.3	7.8	1.6	.8	1.1	(4)
July	11.3	12.0	8.3	1.8	.9	1.0	(4)
August	12.3	13.2	9.4	1.9	.9	.9	.1
September	11.9	12.7	9.3	1.8	.6	.9	.1
October	10.8	12.1	8.6	1.8	.7	.9	.1
November	10.5	10.0	6.9	1.6	.7	.8	(4)
December	7.8	9.8	6.7	1.6	.7	.8	(4)
1944: Annual rate [2]	115.1	136.0	91.1	25.5	11.8	7.4	.2
January	8.1	11.8	7.7	2.1	1.0	.9	.1
February	8.0	10.1	6.7	1.8	.8	.7	.1
March	9.0	11.0	7.2	2.1	.7	1.0	(4)
April	8.2	10.5	7.0	1.9	.7	.9	(4)
May	9.5	11.6	7.7	2.2	.8	.9	(4)
June	10.7	11.5	7.6	2.4	.8	.7	(4)
July	9.3	10.3	6.8	2.1	.9	.5	(4)
August	10.8	13.0	8.4	2.2	1.9	.5	(4)
September	10.9	12.0	8.4	2.1	1.1	.4	(4)
October	11.2	11.4	8.2	2.1	.8	.3	(4)
November	10.8	11.8	7.9	2.3	1.3	.3	(4)
December	8.6	11.0	7.5	2.2	1.0	.3	(4)
Great Lakes							
1943: Annual rate [2]	128.7	105.6	66.1	10.6	14.4	13.1	1.4
January	9.6	7.7	4.4	.8	.6	1.9	(3)
February	12.3	8.5	5.2	.6	.6	2.0	.1
March	14.6	9.8	6.3	.7	1.1	1.5	.2
April	12.4	10.5	5.8	.8	2.5	1.3	.1
May	11.8	7.3	4.6	.7	.7	1.0	.3
June	13.5	7.6	4.9	.9	.8	.9	.1
July	9.6	9.5	6.3	1.4	.7	1.0	.1
August	10.2	9.2	6.4	1.1	.9	.7	.1
September	10.4	9.7	6.6	.9	1.4	.7	.1
October	7.8	9.2	5.1	.9	2.3	.8	.1
November	8.2	7.9	5.1	.9	1.2	.6	.1
December	8.3	8.7	5.4	.9	1.6	.7	.1
1944: Annual rate [2]	84.1	107.4	63.7	11.5	23.5	7.6	1.1
January	8.8	6.0	3.8	1.0	.4	.7	.1
February	6.9	5.8	3.8	.7	.6	.6	.1
March	6.8	8.7	5.9	.7	1.1	.9	.1
April	6.7	9.0	6.2	.9	1.1	.8	(4)
May	7.0	8.3	5.3	.9	1.1	.9	.1
June	8.2	9.5	5.7	1.0	1.8	.9	.1
July	5.4	9.0	5.4	1.1	1.8	.6	.1
August	6.9	15.2	6.2	1.2	7.2	.5	.1
September	6.9	9.9	5.9	1.1	2.4	.4	.1
October	7.3	9.2	4.9	1.0	2.7	.5	.1
November	7.2	7.9	5.1	.9	1.4	.4	.1
December	6.0	8.9	5.5	1.0	1.9	.4	.1
Inland							
1943: Annual rate [2]	104.6	76.0	46.9	12.9	5.8	8.7	1.7
January	(5)	(5)	(5)	(5)	(5)	(5)	(5)
February	(5)	(5)	(5)	(5)	(5)	(5)	(5)
March	10.1	6.6	3.7	.9	0.5	1.2	.3
April	11.3	6.9	3.3	1.0	1.5	.8	.3
May	10.5	5.2	2.7	1.0	.6	.6	.3
June	10.5	7.9	4.2	1.7	.7	.9	.4
July	10.0	7.7	5.2	1.4	.1	.9	.1
August	12.5	9.1	5.8	2.3	.1	.7	.2
September	12.6	8.4	6.0	1.3	.2	.9	(4)
October	10.1	8.6	6.0	1.2	.1	1.2	.1
November	8.4	9.6	5.9	1.1	1.7	.9	(4)
December	8.6	6.0	4.1	1.0	.3	.6	(4)

See footnotes at end of table.

TABLE 7.—*Labor-Turnover Rates (per 100 Employees) in Private Shipyards, by Shipbuilding Region, January 1943–December 1944* [1]—Continued

Region, month, and year	Accessions	Separations					
		Total	Quits	Discharges	Lay-offs	Military	Miscellaneous
Inland—Continued							
1944: Annual rate [2]	98.7	97.8	64.0	17.9	9.0	6.5	0.4
January	14.0	6.5	4.3	1.2	.4	.6	(4)
February	8.7	7.1	3.9	1.7	.8	.6	.1
March	11.1	8.0	5.5	1.1	.5	.8	.1
April	9.2	7.3	4.4	1.5	.7	.7	(4)
May	11.1	8.1	5.0	1.9	.3	.8	.1
June	8.5	8.9	7.0	1.2	.2	.5	(4)
July	8.1	9.5	6.0	2.3	.8	.4	(4)
August	9.8	9.9	6.3	1.9	1.2	.5	(4)
September	5.3	9.4	5.8	1.3	1.9	.4	(4)
October	5.2	8.3	5.5	1.4	1.0	.4	(4)
November	4.7	7.5	5.0	1.3	.8	.4	(4)
December	3.0	7.3	5.3	1.1	.4	.4	.1

[1] Net gains or losses reflected in turnover rates, presented in tables 6 and 7, are not strictly comparable with the trend in private shipyard employment from month to month as presented in table 1, because of differences in the composition of the samples upon which the two series are based. Moreover, employment figures for private shipyards are based on reports covering the midweek of the month, whereas labor turnover rates are based on reports covering the whole month.

[2] Annual rates are the sums of the monthly rates per 100 employees.

[3] Miscellaneous separation rates combined with military separation rates in region break-down in January.

[4] Less than a tenth of 1 precent.

[5] Labor turnover rates are not available for yards in the Inland region for months prior to March 1943.

Although the Selective Service Act was passed in September 1940 and the first inductions were made in November, military separations (including both selective-service withdrawals and voluntary enlistments) were not reported separately until January 1941, when the rate was 0.3 per 100 workers. The military rate remained low throughout most of 1941 but increased in 1942 and reached peak in October, when it was 2.6 and accounted for more than 22 percent of all separations. Beginning in November, separations to join the armed forces declined steadily. By December 1944 the military separation rate was only 0.3 per 100 employees, and the proportion of military separations to the total was about 3 percent.

Accession rates in yards on the Gulf coast were higher than in yards of most other regions throughout 1943 and 1944, yet separations were greater than accessions in August and September 1943 and in all months of 1944 except January and November. Accession rates in Pacific coast yards, although not as high in most months as those in Gulf yards, were generally higher than in the yards of the other regions. Furthermore, separation rates were higher on the Pacific coast than in any of the other regions in most months, and were greater than accessions practically every month from July 1943 to December 1944. Although yards on the Atlantic coast had lower separation as well as accession rates than yards in the other major regions, separations exceeded accessions almost throughout the period August 1943 to December 1944.

Quits accounted for from 61 to more than 73 percent of total separations in all regions in December 1944. Lay-offs made up 5 to 11 percent of the total in all regions but the Great Lakes, where they accounted for more than 21 percent. Discharges on the other hand were lowest in the Great Lakes region (10.8) and most important in yards on the Gulf coast (26.6). Discharges in other regions were

from 15 to 20 percent of all separations. The proportion of military separations to the total varied little from region to region, being mostly between 3 and 5 percent.

Table 8 shows the important differences during 1943 and 1944 between men's and women's turnover rates.

TABLE 8.—*Labor-Turnover Rates (per 100 Employees) in Private Shipyards, by Sex, January 1943–December 1944*

Year and month	Total accessions		Total separations		Quits	
	Male	Female	Male	Female	Male	Female
1943: Annual rate [1]	124.5	241.3	121.1	147.2	77.9	104.7
January	13.9	25.4	12.1	11.1	7.8	7.8
February	12.3	30.0	10.1	11.0	6.3	6.3
March	12.7	26.7	11.3	11.6	7.4	7.5
April	11.3	23.4	10.3	11.0	6.4	7.9
May	10.2	21.9	9.3	11.5	6.1	8.8
June	11.3	21.7	9.4	12.3	6.0	9.3
July	10.4	18.3	10.7	13.0	7.0	8.6
August	9.8	19.5	11.4	14.3	7.6	10.2
September	9.9	17.2	10.4	14.7	7.0	11.2
October	8.3	14.8	9.5	12.7	5.9	9.5
November	8.0	13.4	8.0	11.6	4.9	8.3
December	6.4	9.0	8.6	12.4	5.5	9.3
1944: Annual rate [1]	88.9	139.3	111.6	147.8	70.2	107.6
January	7.8	12.2	9.0	13.8	5.5	10.1
February	6.7	10.9	8.2	11.0	5.1	8.0
March	7.0	12.6	9.0	11.3	5.6	8.3
April	6.7	11.9	8.5	11.2	5.3	8.0
May	7.5	12.8	9.8	11.8	5.9	8.8
June	8.0	13.5	10.1	13.1	6.2	9.4
July	6.7	11.3	9.0	11.8	5.8	8.5
August	7.4	12.8	10.3	13.4	6.5	9.7
September	7.5	12.4	10.2	13.1	6.7	10.0
October	8.1	12.1	9.5	12.6	6.0	9.5
November	8.7	10.6	8.9	12.4	5.8	8.6
December	6.8	6.2	9.1	12.3	5.8	8.7

[1] Annual rates are the sums of the monthly rates per 100 employees.

It is clear that the accession rate for women was significantly higher than the rate for men through 1943 and for all months in 1944, except December, indicating heavy recruiting of women in the shipyards. In many months the women's rates were more than twice the men's. Although the female accession rate decreased from a peak of 30.0 in February 1943 to 12.2 in January 1944, the 1944 rates did not drop below 10.6 except in December (6.2). Male accession rates during 1944, also lower than in 1943, remained relatively steady, ranging from 8.7 to 6.7.

To correspond with the higher accession rates, the quit rates for women also were higher than for men. Furthermore, while quit rates for men tended to decrease during 1943, the rates for women increased. In 1944 men's quit rates ranged from 5.1 to 6.7 and women's from 8.0 to 10.1. A variety of reasons may be given for women's higher quit rates; for example, (1) the purely mathematical one of the heavier accession rate of women and consequently the greater probability that more women workers will prove occupationally unadjusted, (2) the lesser adaptability of the women than of the men who might apply for shipyard work, and (3) the pressure of home responsibilities. It should be recognized that one of the conditions which made it possible to recruit so many people who normally do not work for hire, was that they were also free to quit. A higher quit rate than in peacetime is, therefore, the arithmetic corollary of an expanded labor force.

United States Navy Yards

Both total accession and separation rates in United States navy yards over the period March 1943 to December 1944 (the only period for which data are available) have been lower than the rates in private shipyards. Except for June 1943 when the rate was distorted because of intensified recruiting in navy yards, accession rates ranged from 3.3 to 5.9 in navy yards as compared with 6.6 to 13.7 in private shipyards; separation rates in navy yards ranged from 3.5 to 6.1 as against 8.3 to 11.3 in private shipyards. Separation rates in navy yards were greater than accession rates in most months after August 1943. The need for additional personnel on the repair of naval vessels because of the intensified war with Japan in 1944, however, caused a gradual rise in accession rates beginning in August, and in November and December accession rates were higher than separation rates—5.1 per 100 employees as against 4.8.

TABLE 9.—*Total Accession and Separation Rates (per 100 Employees) in United States Navy Yards, March 1943–December 1944* [1]

Year and month	Total accessions	Total separations	Year and month	Total accessions	Total separations
1943: Annual rate [2]	49.0	44.8	1944: Annual rate [2]	56.8	57.9
March	5.9	4.2	January	4.6	3.5
April	4.1	3.7	February	4.2	4.1
May	4.8	3.8	March	4.5	4.8
June	[3] 7.3	4.1	April	4.2	4.3
July	5.8	5.0	May	4.5	5.2
August	4.7	5.4	June	5.7	5.3
September	4.5	6.1	July	4.5	4.9
October	4.5	4.6	August	4.8	5.4
November	4.1	4.2	September	4.9	5.6
December	3.3	3.7	October	4.7	5.2
			November	5.1	4.8
			December	5.1	4.8

[1] Data not available before March 1943.
[2] Annual rates are the sums of the monthly rates per 100 employees.
[3] High accession rate in this month indicates recruitment for new repair facilities.

Absence Rates During the War [3]

Before the war absence from work was not considered of sufficient importance even to measure. With the emphasis on production that came with the war emergency, workers' absences began to receive at least statistical attention. Absenteeism was given popular notice in the fall of 1942, and as early as the summer of that year its potentialities as a production problem were being explored. At that time shipyards began to conduct studies of absenteeism in an effort to determine its causes and characteristics, and on the basis of their findings introduced various measures in an attempt to reduce absence. Federal Government agencies also began to study the problem to assist labor and management in minimizing loss of production time.

One of the facts revealed by studies of absenteeism was that workers were away from the job most frequently because of illness, difficulty in securing housing, problems of transportation, need for time during working hours to conduct personal business, and inclement weather. Absences were most numerous over week ends (Saturday and Monday).

[3] For more detailed discussion of absenteeism in shipyards and analysis of trends, see Absenteeism in Commercial Shipyards, 1942, in Monthly Labor Review, February 1943 (reprinted, with additional data, as Bulletin No. 734); Effect of Unannounced Quits on Absenteeism in Shipbuilding, in Monthly Labor Review, June 1943 (reprinted as Serial No. R. 1543); and Employment, Labor Turnover, and Absenteeism in Private Shipyards, 1943, in Monthly Labor Review, June 1944 (reprinted as Serial No. R. 1655).

Various remedial measures were introduced. Absence-control records were set up; appeals were made to the workers by speakers, bulletin boards, and posters; "presenteeism" contests were conducted; workers were assisted in locating satisfactory homes and in obtaining transportation; in-yard ration boards were established; workers were assisted with tax and draft-board problems; and recreation centers were built and operated. In addition, many yards introduced such disciplinary measures as suspending employees for short-period absences, and discharging workers who were chronic offenders. Government agencies also took steps to help reduce absenteeism. Premium calendar days were abolished by a shipbuilding stabilization committee agreement which provided that time and a half be paid, not for Saturday and Sunday work, but for the worker's sixth and seventh workday in the week; yard cafeterias were opened; special busses were sent to shipyards to alleviate transportation problems; Federal housing projects were approved; etc.

TABLE 10.—*Absence Rates in Private New Construction Shipyards, by Shipbuilding Region, January 1943–December 1944* [1]

[Midweek]

Month and year	Absence rates in private shipyards					
	All regions	Atlantic coast	Gulf coast	Pacific coast	Great Lakes	Inland
1943: January	8.9	9.0	9.6	8.8	5.5	7.5
February	9.2	10.0	9.3	8.7	6.5	6.6
March	8.7	9.8	7.4	8.6	5.9	6.6
April	7.7	8.4	6.7	7.7	5.1	6.6
May	8.1	8.9	7.5	7.9	5.6	6.7
June	8.1	9.0	8.0	7.8	4.6	5.0
July	8.7	10.2	8.3	8.2	4.7	6.1
August	8.9	10.5	7.7	8.3	5.7	6.2
September	7.9	9.2	6.7	8.0	5.0	5.4
October	8.5	9.7	6.5	8.6	6.1	6.2
November	7.8	8.6	6.3	8.1	6.1	6.2
December	9.7	10.8	7.2	10.3	8.2	7.0
1944: January	[2] 8.9	[2] 10.1	[2] 8.0	9.0	5.7	6.1
February	8.8	10.7	7.4	8.0	6.4	7.0
March	8.8	10.1	8.3	8.3	6.7	6.6
April	8.6	10.2	7.7	8.1	6.6	6.0
May	8.1	8.9	7.1	8.3	6.2	5.9
June	8.3	8.8	8.0	8.6	6.6	5.9
July	8.4	9.1	8.1	8.7	6.0	5.8
August	8.5	9.7	8.0	8.4	6.1	5.3
September	9.0	[3] 10.9	8.1	8.6	5.7	6.2
October	8.2	8.9	7.6	8.6	6.1	6.0
November	8.5	9.3	7.2	9.1	6.7	6.3
December	8.1	8.2	6.9	8.9	7.3	8.0

[1] The absence rate is the ratio, expressed in percent, of man-hours lost through absenteeism to the sum of man-hours lost and man-hours actually worked. Absence rates are computed for ship construction yards only. Rates are not available by region prior to January 1943. Rates for all yards together from April to December 1942 are as follows: April, 7.2; May, 6.2; June, 7.3; July, 7.0; August, 7.7; September, 7.3; October, 7.7; November, 8.1; December, 8.3.

[2] In computing these rates, figures covering the third week in January were used for the South Atlantic and Gulf coast yards to avoid the distortion of the rates for the mid-week caused by the storm of January 10–15.

[3] Increase in absence rate caused largely by inclement weather during the reported workweek.

Absence rates nevertheless rose during 1942 and 1943 because the measures taken to reduce absence were not sufficient to overcome the problems of wartime working and living conditions that have affected workers' attendance. Absence rates ranged from 6.2 to 8.3 percent from April to December 1942, and in 1943 they were generally between 7.7 and 9.2. Because of an influenza epidemic and inclement

weather the rate rose to 9.7 percent in December 1943. Rates in 1944 were between 8.1 and 9.0 percent.

Except in December 1943, absence rates in private new construction shipyards were well above those in most other war-important industries each month from March 1943 to December 1944, the only period for which comparable rates are available. Of the major shipbuilding regions, highest absence rates were reported by yards on the Atlantic coast and the lowest on the Gulf. Absence rates in the Inland and Great Lakes regions tended to be lower than in any of the others.

Hours and Earnings

Average Hours Worked per Week

Average weekly hours worked, about 38 early in 1940, began to rise significantly during that year and continued to rise until they reached 49 in 1942. There was a slight drop toward the end of 1942 and little change in the following year. Average hours in 1944 ranged from 45.7 in January to 49.3 in December (table 12). There was an unusually short average workweek in January 1944, because of a severe storm in the Gulf coast region which interrupted operations in most of the yards in the area, and because of an order by the Maritime Commission and the Navy Department that Sunday work be reduced to a minimum. The order reducing Sunday work appears to have affected only the Atlantic coast so far as the curtailment of wage earners' weekly hours of work is concerned.

TABLE 11.—*Distribution of Wage Earners in Private Shipyards, by Average Hours Worked per Week and Shipbuilding Region, December 1944*

Average hours worked per week per wage earner	All regions		Atlantic coast		Gulf coast		Pacific coast		Great Lakes		Inland	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	1,008,591	100.0	377,200	100.0	174,823	100.0	362,174	100.0	37,073	100.0	57,321	100.0
Less than 40.0	44,098	4.4	265	.1	253	.1	29,736	8.2	1,591	4.3	12,253	21.4
40.0 to 41.9	53,492	5.3	1,006	.3	650	.4	47,875	13.2	2,517	6.8	1,444	2.5
42.0 to 43.9	117,263	11.6	2,885	.8	306	.2	105,551	29.2	7,544	20.3	977	1.7
44.0 to 45.9	77,173	7.7	42,628	11.3	12,972	7.4	21,027	5.8	0	0	546	1.0
46.0 to 47.9	132,639	13.1	82,941	22.0	17,408	10.0	26,464	7.3	5,421	14.6	405	.7
48.0 to 49.9	217,082	21.5	96,030	25.4	25,429	14.5	67,840	18.7	4,361	11.7	23,422	40.9
50.0 to 51.9	79,911	7.9	33,656	8.9	22,810	13.1	14,470	4.0	839	2.3	8,136	14.2
52.0 to 53.9	123,062	12.2	29,724	7.9	46,041	26.3	36,714	10.2	4,149	11.2	6,434	11.2
54.0 to 55.9	41,892	4.2	24,991	6.6	13,393	7.7	437	.1	23	.1	3,048	5.3
56.0 and over	121,979	12.1	63,074	16.7	35,561	20.3	12,060	3.3	10,628	28.7	656	1.1

Hours of work in repair yards are consistently higher than in yards engaged in new construction. In December 1944 the average for repair yards was 54.3 and for new construction yards, 48.1. Wage earners in 138 yards engaged primarily in the construction of naval vessels averaged 48.7 hours per week in December; in 42 yards constructing merchant vessels, the average was 47.7 hours.

TABLE 12.—*Average Weekly Hours and Hourly and Weekly Earnings in Private Shipyards, January 1935–December 1944* [1]

Month	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944
	Average weekly hours									
January	31.7	34.6	35.9	36.4	37.5	38 2	42.0	48.1	47.1	[2] 45.7
February	31.8	34.9	35.5	36.2	37.6	37.1	42.8	48.6	46.7	46.2
March	32.0	35.9	38.0	37.1	37.9	39.0	44.0	48.4	46.9	46.6
April	32.1	36.2	37.9	36.4	37.6	38.5	42.8	49.0	47.7	47.3
May	33.4	36.7	37.5	37.0	38.9	39.5	43.9	48.6	47.8	48.1
June	32.4	36.7	37.6	37.3	38.5	39.2	45.4	48.4	47.7	47.4
July	32.6	35.9	36.9	37.0	37.6	39.3	44.8	48.2	47.9	47.1
August	32.8	35.4	38.2	35.9	38.1	40.3	44.4	47.6	47.6	47.8
September	32.9	35.0	35.8	36.5	37.4	40.9	44.8	47.0	47.6	47.6
October	33.5	36.2	37.3	36.9	38.3	41.7	45.4	47.6	47.9	49.1
November	32.7	35.8	36.9	34.5	37.9	38.5	42.9	48.0	48.3	48.8
December	34.3	35.0	37.9	37.5	38.2	42.6	46.0	47.7	47.1	49.3
	Average hourly earnings									
January	$0.74	$0.76	$0.78	$0.84	$0.84	$0.85	$0.89	$1.09	$1.22	[2] $1.31
February	.74	.76	.78	.84	.83	.86	.90	1.09	1.22	1.32
March	.75	.75	.79	.83	.84	.86	.89	1.08	1.25	1.32
April	.74	.75	.82	.84	.83	.86	.91	1.08	1.25	1.33
May	.75	.75	.81	.83	.82	.86	.93	1.09	1.26	1.33
June	.74	.75	.80	.83	.83	.87	.95	1.09	1.26	1.32
July	.73	.76	.82	.83	.83	.86	1.01	1.14	1.26	1.33
August	.74	.76	.82	.84	.83	.86	1.04	1.19	1.28	1.34
September	.76	.76	.83	.84	.83	.87	1.04	1.25	1.34	1.37
October	.76	.77	.83	.83	.84	.88	1.06	1.21	1.31	1.38
November	.76	.77	.84	.84	.84	.88	1.07	1.26	1.36	1.41
December	.77	.79	.85	.85	.85	.90	1.06	1.22	1.32	1.38
	Average weekly earnings									
January	$23.57	$26.56	$28.40	$31.21	$31.60	$32.32	$37.69	$52.42	$57.24	[2] $59.67
February	23.61	26.49	27.47	31.15	31.65	31.53	38.71	53.38	57.16	60.83
March	24.48	27.03	29.99	31.22	31.78	33.68	39.30	52.28	58.46	61.46
April	23.86	27.60	31.06	31.57	31.22	33.25	39.17	53.28	59.50	62.89
May	25.04	27.86	30.79	30.92	32.29	34.20	41.00	53.27	60.04	64.02
June	24.33	27.57	30.57	31.61	32.53	34.17	43.83	52.73	59.83	62.80
July	24.15	27.55	30.22	30.90	31.71	34.03	45.54	55.11	60.55	62.69
August	24.64	27.06	31.44	29.99	31.69	34.88	46.47	56.82	60.80	63.96
September	24.98	26.84	30.34	30.60	31.41	36.08	46.82	58.60	63.68	65.23
October	25.57	27.78	31.49	30.75	32.26	36.93	47.84	57.54	62.91	67.69
November	25.35	27.70	31.13	29.05	31.85	34.46	45.90	60.67	65.61	68.68
December	26.86	27.97	32.79	31.87	32.73	38.37	49.19	58.09	62.23	68.17

[1] The average hours worked per week and average weekly and hourly earnings shown here are the figures published by the Bureau in the monthly release entitled "Employment and Pay Rolls."

[2] Sunday work was reduced to a minimum in yards constructing vessels for the Navy and the Maritime Commission.

Although the average hours worked per week by all wage earners over a period of months do not vary much, the average weekly hours worked in individual yards in any one month are much more widely distributed. Analysis of average weekly hours worked in 330 private shipyards during December 1944 shows that in 123 yards employing almost 29 percent of all wage earners the average hours worked per wage earner were 52 or more a week; 83 yards employing a fifth of all wage earners averaged between 44 and 48 hours a week per wage earner; and 78 yards with about a fifth of the wage earners averaged less than 44 hours.

Average weekly hours in Pacific coast yards were lower than in the other four regions but were more constant from month to month, ranging only from 43.4 to 45.5 during the period January 1943 and August 1944. The rise during the last 4 months of 1944 was occasioned by a sharp increase in Sunday work in several yards engaged in urgent programs. (See table 13.)

TABLE 13.—*Average Weekly Hours and Hourly and Weekly Earnings in Private Shipyards, by Shipbuilding Region, January 1943 to December 1944*

[Midweek]

Month and year	Atlantic coast	Gulf coast	Pacific coast	Great Lakes	Inland
	Average weekly hours				
1943: January	49.3	46.4	43.4	45.9	46.1
February	48.4	46.3	44.2	45.0	44.9
March	48.9	47.5	44.6	47.3	46.0
April	49.4	48.5	45.1	50.6	46.3
May	48.8	48.8	45.5	50.0	46.4
June	48.8	47.5	45.0	49.4	48.5
July	48.2	47.3	44.6	49.6	46.5
August	49.0	47.0	44.7	49.7	47.7
September	48.8	48.5	44.8	51.5	48.1
October	49.1	48.3	44.5	50.6	46.8
November	49.7	48.9	44.7	50.8	47.3
December	49.1	49.0	44.2	49.1	48.2
1944: January [1]	47.0	[2] 43.4	44.8	49.0	50.6
February	46.1	47.6	44.6	48.3	49.4
March	47.0	46.8	44.5	50.3	51.1
April	47.0	48.2	44.9	50.2	52.4
May	48.0	50.1	45.0	49.0	53.3
June	47.4	49.4	44.9	49.4	50.4
July	47.8	49.4	44.4	49.5	49.7
August	47.9	50.5	44.4	50.1	50.7
September	[2] 46.6	49.5	[2] 46.4	50.8	48.7
October	48.6	50.2	46.7	51.4	49.2
November	48.7	50.5	46.3	51.6	47.0
December	50.4	52.2	45.8	49.6	47.7
	Average hourly earnings				
1943: January	$1.23	$1.13	$1.35	$1.10	$1.14
February	1.26	1.12	1.35	1.09	1.13
March	1.23	1.16	1.35	1.11	1.15
April	1.24	1.13	1.37	1.16	1.19
May	1.25	1.17	1.38	1.16	1.20
June	1.24	1.16	1.37	1.13	1.19
July	1.29	1.17	1.40	1.16	1.22
August	1.28	1.18	1.38	1.18	1.22
September [4]	1.33	1.26	1.42	1.22	1.26
October	1.34	1.21	1.40	1.19	1.23
November [4]	1.38	1.27	1.49	1.26	1.21
December	1.34	1.24	1.42	1.23	1.25
1944: January [1]	1.29	1.21	1.43	1.21	1.26
February	1.31	1.22	1.42	1.21	1.26
March	1.31	1.21	1.42	1.23	1.26
April	1.32	1.21	1.42	1.26	1.29
May	1.33	1.23	1.42	1.27	1.29
June	1.33	1.23	1.42	1.27	1.28
July	1.31	1.22	1.42	1.25	1.28
August	1.33	1.22	1.43	1.27	1.29
September [4]	1.38	1.23	[3] 1.48	1.30	1.27
October	1.40	1.26	1.48	1.32	1.29
November [4]	1.44	1.26	1.51	1.33	1.28
December	1.42	1.27	1.47	1.30	1.30

See footnotes at end of table.

TABLE 13.—*Average Weekly Hours and Hourly and Weekly Earnings in Private Shipyards, by Shipbuilding Region, January 1943 to December 1944*—Continued

[Midweek]

Month and year	Atlantic coast	Gulf coast	Pacific coast	Great Lakes	Inland
	Average weekly earnings				
1943: January	$60.57	$52.24	$58.61	$50.38	$52.47
February	61.09	51.74	59.57	49.01	50.96
March	59.90	54.87	60.31	52.47	53.00
April	61.44	55.00	61.57	58.49	54.92
May	61.19	57.01	62.67	58.06	55.52
June	60.59	55.32	61.67	56.09	57.83
July	62.25	55.36	62.54	57.60	56.81
August	62.65	55.35	61.56	58.39	57.94
September [4]	64.89	61.33	63.78	62.70	60.61
October	65.56	58.57	62.03	60.24	57.79
November [4]	68.68	61.95	66.60	63.94	57.48
December	65.83	60.70	62.84	60.34	60.06
1944: January [1]	60.65	[2] 52.53	64.24	59.44	63.89
February	60.40	58.13	63.45	58.31	62.08
March	61.69	56.63	63.02	62.00	64.46
April	62.01	58.50	63.81	63.54	67.55
May	63.99	61.37	63.87	62.24	68.80
June	62.98	60.78	64.00	62.53	64.76
July	62.74	60.48	63.03	61.85	63.63
August	63.89	61.69	63.25	63.58	65.51
September [4]	64.06	60.94	[3] 68.66	65.90	61.76
October	68.11	63.13	69.17	67.64	63.54
November [4]	69.89	63.82	69.75	68.67	60.20
December	71.56	66.53	67.27	64.63	61.88

[1] Sunday work was reduced to a minimum in yards constructing vessels for the Navy and the Maritime Commission.

[2] Severe storm occurring during the reported workweek interrupted operations in most Gulf coast yards in January, and in many Atlantic coast yards in September.

[3] Figures reflect sharp increase in Sunday work in several yards engaged in urgent programs.

[4] Figures are affected by occurrence of a holiday within the workweek reported by some yards.

Plant Utilization

The ratio of workers on the second shift to those on the first has remained fairly constant since January 1943, ranging from 44.9 percent in January to 41.4 percent in July 1943. The ratio for December 1944 was 43.5 percent. The ratio of employment on the third shift to that on the first, remained in the neighborhood of 20 percent throughout 1943, but decreased from 19.2 percent in January 1944 to 12.3 percent in November (table 14).

In all major yards of the country during the war, Saturday has been a regularly scheduled workday; and through 1943 and 1944 employment on Saturday was more than nine-tenths of the average employment on weekdays, that is, Monday through Friday. The November and December 1943 ratios of Sunday employment to Monday-Friday employment of 40.9 and 42.0 percent, respectively, gave way to 9.4 in January 1944. This sharp cut was the direct result of an order issued by the Maritime Commission that on January 1, 1944, all shipyards constructing merchant vessels operate on a straight 6-day basis. Private yards constructing naval vessels also were advised to limit Sunday work as much as possible. The rates of Sunday employment in Maritime yards dropped from 61.2 to 4.7 percent between December 1943 and January 1944, whereas in private yards constructing naval vessels the ratio decreased much less, from 21.0 to 14.5 percent. The ratio for all yards remained between 9.4

and 14.4 percent during the first 8 months of 1944, but in September increased to 22.7 percent because Maritime yards engaged in urgent programs had to begin or expand Sunday operations. Sunday work continued high during the remainder of the year.

TABLE 14.—*Plant Utilization in Private Yards Engaged in New Ship Construction, January 1943–December 1944*

[Midweek]

Year and month	Ratio (in percent) of—				Percent of plant utilization [1]	Average weekly hours	
	Second to first-shift employment	Third to first-shift employment	Saturday to Monday–Friday employment	Sunday to Monday–Friday employment		Productive wage earners	All wage earners
1943: January	44.9	20.3	93.6	48.6	49.1	46.3	46.0
February	41.9	19.5	93.4	45.9	47.8	45.8	45.7
March	41.7	19.6	94.1	46.0	47.6	46.5	46.4
April	42.1	19.8	93.4	40.8	48.0	47.1	47.1
May	42.0	19.9	94.2	40.6	48.1	47.2	47.1
June	41.7	20.7	93.7	39.2	48.0	46.7	46.7
July	41.4	20.0	94.1	35.6	47.5	46.2	46.2
August	42.1	20.4	93.2	39.6	48.3	46.4	46.4
September	42.6	20.9	95.0	41.6	48.9	47.1	47.2
October	42.6	20.3	93.1	41.2	48.1	46.6	46.7
November	43.7	20.1	95.5	40.9	49.0	47.1	47.2
December	44.0	20.3	93.4	42.0	48.0	46.6	46.6
1944: January	44.0	19.2	92.8	[2] 9.4	45.0	44.9	45.0
February	44.7	18.2	91.7	9.7	45.8	45.2	45.4
March	44.0	17.7	93.8	12.1	45.3	45.5	45.7
April	44.3	16.7	93.8	13.3	45.7	46.0	46.2
May	43.2	15.1	94.3	14.3	45.9	46.9	47.1
June	43.5	14.9	93.9	9.6	45.1	46.2	46.4
July	43.2	13.6	94.4	11.3	[3]	[3]	46.5
August	43.3	13.5	94.2	14.4	[3]	[3]	46.9
September	43.3	12.6	93.2	22.7	[3]	[3]	46.8
October	42.9	12.4	93.2	23.8	[3]	[3]	47.8
November	43.0	12.3	93.8	29.0	[3]	[3]	47.6
December	43.5	12.6	94.9	25.6	[3]	[3]	48.1

[1] Ratio, in percent, of production man-hours actually worked to the theoretical maximum weekly production man-hours (168 times the production employment on the principal shift).
[2] Sunday work ordered reduced to a minimum in yards constructing vessels for the Navy and Maritime Commission.
[3] Data not available.

Hourly and Weekly Earnings

There has been an almost steady rise in the average hourly and weekly earnings of wage earners in private shipyards since 1935. Hourly earnings were about 75 cents early in 1935 and 85 cents at the beginning of 1940. By January 1942 they were $1.09 and in January 1943, $1.22. The peak of $1.41 was reached in November 1944 (table 12). Although average hourly earnings in new construction and in repair yards have usually been at about the same level since June 1942, weekly earnings have been higher in repair yards because of a longer workweek and a rate differential for repair work on the Pacific coast (table 15).[4] Average weekly earnings in all private shipyards were $24 early in 1935 and reached $34 early in 1940. They rose steeply after this as a result of the lengthening workweek, and overtime pay and other premiums, and by early 1942 were $53, more than twice the amount in 1935. In 1943, weekly earnings were between $57 and $64 except in November, when the midweek for

[4] In the San Francisco area and yards north.

which reports were received included the Armistice Day holiday and thus reflected overtime earnings ($66). In 1944 weekly earnings fluctuated between $60 and $64 during the first 8 months and then rose sharply, reaching a peak of $69 in November. This was the result largely of longer hours of work and overtime pay. Weekly earnings in repair yards averaged $75 and $76 in October and November 1943; and in 1944 the weekly earnings ranged from $66 to $75, as compared with a range of from $60 to $68, respectively, in new construction yards.

TABLE 15.—*Average Weekly Hours and Hourly and Weekly Earnings in Private New Construction Yards and Repair Yards, June 1942–December 1944*

Year and month	Average weekly hours		Average hourly earnings		Average weekly earnings	
	New construction yards	Repair yards	New construction yards	Repair yards	New construction yards	Repair yards
1942: June	48.5	48.1	$1.10	$1.12	$53.35	$54.90
July	47.9	52.4	1.18	1.14	56.09	59.54
August	47.7	51.8	1.21	1.22	57.25	62.94
September	47.4	52.6	1.29	1.27	60.94	66.62
October	46.9	49.4	1.23	1.20	57.63	59.35
November	46.8	49.4	1.27	1.24	59.56	60.52
December	46.7	51.7	1.25	1.23	58.56	64.67
1943: January	46.0	52.7	1.25	1.24	57.44	64.53
February	45.7	51.9	1.26	1.29	57.59	66.44
March	46.4	52.5	1.26	1.25	58.26	65.70
April	47.1	52.9	1.26	1.26	59.44	66.54
May	47.1	52.3	1.28	1.24	60.52	64.98
June	46.7	51.6	1.28	1.25	59.76	64.78
July	46.2	52.1	1.31	1.29	60.44	67.30
August	46.4	53.0	1.29	1.27	60.02	67.34
September	47.1	52.0	1.35	1.28	63.55	66.68
October	46.7	53.4	1.33	1.38	61.67	74.60
November	47.2	54.2	1.39	1.39	65.49	76.18
December	46.6	53.3	1.35	1.31	62.87	69.94
1944: January	45.0	53.4	1.32	1.31	59.58	70.27
February	45.4	51.4	1.33	1.31	60.45	66.96
March	45.7	51.7	1.33	1.30	60.73	67.20
April	46.2	51.2	1.34	1.29	61.90	65.99
May	47.1	52.4	1.34	1.31	63.14	68.46
June	46.4	51.4	1.34	1.32	62.46	67.72
July	46.5	51.1	1.33	1.29	61.98	66.17
August	46.9	51.3	1.34	1.29	62.99	66.36
September	46.8	51.0	1.38	1.32	64.80	67.31
October	47.8	52.5	1.39	1.39	66.59	73.05
November	47.6	52.5	1.41	1.43	67.26	74.86
December	48.1	54.3	1.40	1.36	67.53	74.05

Yards on the Pacific coast, with the lowest weekly hours, averaged the highest hourly earnings throughout the period January 1943 to December 1944 (table 13). Higher average hourly earnings in these yards, as compared with the yards of other regions, are the result of a greater proportion of workers classified as first-class craftsmen, higher basic wage rates among other classes of workers, and the pay differential for repair work. Atlantic coast yards ranked second only to Pacific coast yards in average hourly earnings, partly because of the utilization of incentive plans. Although hourly earnings in the Inland and Great Lakes regions were lower than in the Pacific and Atlantic coastal regions, weekly earnings were relatively high because of the high average weekly hours worked. Average weekly earnings in Great Lakes and Inland yards went as high as $69 in 1944.

Occupation and Craft-Class Distribution, June 1943 [5]

Data regarding employment and earnings in shipyards cannot be evaluated adequately without reference to the occupational structure and distribution of craft classes.

Over 50 percent of the labor force in each of the five shipbuilding areas studied were craftsmen in June 1943—over 60 percent on the Pacific coast. Helpers also represented a relatively high percentage of the force in each region, ranging from 12 percent in Inland yards to 20 percent in the Great Lakes region. As indicated in table 16, the greatest deviation from the average was shown on the Atlantic and Pacific coasts. The Pacific coast yards employed the highest percentage of first-class craftsmen (48.7 percent) and supervisors (9.3 percent) and the lowest percentage of other classes of craftsmen, laborers, and apprentices. Atlantic coast yards, on the other hand, showed the lowest percentage of first-class craftsmen (19.8 percent).

TABLE 16.—*Percentage Distribution of Private Shipyard Workers, by Class of Workers and Region, June 1943*

Class of workers	Percent of workers in private shipyards					
	All regions	Atlantic coast	Gulf coast	Pacific coast	Great Lakes	Inland
Craftsmen, first class [1]	33.7	19.8	32.3	48.7	31.1	32.7
Craftsmen, other classes	23.3	33.9	21.2	13.3	22.8	21.3
Helpers	16.1	16.3	13.9	16.4	19.6	12.4
Laborers	5.1	5.4	9.2	3.2	5.1	9.4
Apprentices and learners	4.9	7.5	11.8	.4	5.4	4.1
Supervisors	7.2	5.3	5.8	9.3	7.5	9.3
Other workers [2]	9.7	11.8	5.8	8.7	8.5	10.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

[1] Includes premium men.
[2] Covers occupations considered as semiskilled and those not directly responsible for production work; i. e., guards, truck drivers, crane followers, and rivet heaters.

Labor agreements entered into during the emergency by the American Federation of Labor with the majority of Pacific coast yards help explain the difference. The master contract on the west coast provides for one class of craftsmen for helpers and laborers, and for three classes of trainees. In Atlantic coast yards where the Congress of Industrial Organizations, and the East Coast Alliance of Independent Shipyard Unions predominate, there are generally at least three classes of craftsmen, in addition to handymen, helpers, laborers, and apprentices.

On the Gulf coast, yards having contracts with the C. I. O. list classes similar to those on the Atlantic coast, whereas the A. F. of L. contracts provide for one class of craftsmen, apprentices, helpers, and laborers. The occupational structure of Great Lakes yards is less uniform than in other regions though somewhat similar to the structure in yards on the Atlantic coast. Individual Inland yards tend to follow the pattern predominating in the nearest adjacent region.

[5] This and the following section are based on detailed analysis of occupational wage-rate schedules for the week ending June 18, 1943, submitted to the Bureau of Labor Statistics by about 71 percent of all private shipyards with Federal contracts in continental United States and employing 92 percent of the wage earners. For a more complete discussion of employment structure and base rates see Basic Wage Rates in Private Shipyards, June 1943, in Monthly Labor Review, August 1944, pp. 385-404 (reprinted as Serial No. R. 1679).

A complete picture of structural differences in the five regions involves not only analysis of the percentage employed at each grade within each occupation but also the differences in the relative numbers in each occupation. Table 17 shows the distribution of shipyard workers for selected occupations, by region, in June 1943. Each occupation is composed of all grades or classes, from superintendent to helper.

TABLE 17.—*Percentage Distribution of Private Shipyard Workers, by Region and Occupation, June 1943*

Occupation	Percent of workers in private shipyards					
	All regions	Atlantic coast	Gulf coast	Pacific coast	Great Lakes	Inland
Anglesmiths	0.3	0.2	0.4	0.5	0.2	0.1
Blacksmiths	.3	.5	.3	.2	.5	.3
Boilermakers	2.3	1.6	3.5	2.8	.6	2.4
Burners	3.8	3.4	4.6	4.3	3.1	2.5
Carpenters (shipwrights)	6.1	5.2	6.2	7.4	5.6	3.9
Chippers and caulkers	2.8	2.5	2.3	3.3	3.0	2.9
Coppersmiths	.5	.5	.5	.6	(1)	(2)
Crane operators, over 20 tons	.7	.7	.4	.6	.8	.6
Crane operators, 20 tons and under	.6	.4	.8	.6	.2	.6
Electricians	6.6	6.2	6.3	7.3	6.6	4.3
Furnacemen	.1	.2	(1)	(1)	.2	(1)
Joiners	.8	1.0	.2	.6	1.9	.2
Laborers	5.5	5.7	9.8	3.5	5.6	10.9
Layer-out men	.4	.4	1.1	.3	.2	.3
Loftsmen	.4	.3	.3	.5	.5	.3
Machinists (inside and outside)	8.1	9.0	7.8	7.1	10.0	6.8
Molders	(1)	.1	(1)	(1)	(1)	(1)
Painters	3.1	3.0	2.9	3.0	4.1	4.8
Patternmakers	.1	.1	(1)	(1)	.1	(1)
Pipe coverers	.2	.5	.3	(1)	.3	.2
Pipe fitters	7.2	7.1	8.1	7.2	8.2	5.3
Riggers	2.8	3.3	2.3	2.9	1.1	.9
Riveters	.4	.6	.1	.3	.3	.1
Sheetmetal workers	3.0	3.3	3.0	3.1	1.9	1.0
Shipfitters	11.0	9.0	13.0	12.7	10.3	8.1
Tool and die makers	.1	.1	(1)	(1)	.1	(1)
Welders	15.3	12.6	16.4	17.5	13.8	20.8
All others	17.5	22.5	9.4	13.7	20.8	22.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

[1] Less than a tenth of 1 percent.
[2] No employees reported for this occupation.

Of the 26 occupations listed in table 17, the first 10 in order of their numerical importance are welders, shipfitters, machinists, pipe fitters, electricians, carpenters, laborers, burners, painters, and sheet-metal workers.

Welders represented over 15 percent of all the wage earners in all regions combined and numerically were the most important group in each region. Differences in the types of vessels and methods of production that predominate, account for the range in the proportion of welders employed. For example, yards on the Atlantic coast have had long peacetime experience in building naval vessels, in addition to tankers, freight boats, and passenger liners. The combination of experience and available facilities has resulted in centralizing the combat-vessel program on the Atlantic coast. Since many of the parts of combat ships must be riveted—whereas cargo vessels, for example, are in most cases almost entirely welded—there are proportionately fewer welders on the Atlantic coast than in any of the

other regions. Added to this are two further considerations: (1) There are a greater number of repair yards in this region than in the others, and many vessels requiring repair were built before welded hulls were common; and (2) some Atlantic coast yards use a combination riveted and welded hull on Liberty ships, as compared with the almost entirely welded hull built elsewhere. All of these factors tend to decrease the number of welders and, conversely, to increase the number of riveters.

In the proportion of welders employed, west coast yards, widely known for their all-welded construction of commercial vessels, rank second only to the Inland yards, which are engaged primarily in the construction of small boats and landing craft.

Among the most essential groups, in terms of efficient ship production, are the shipfitters, who are second in importance numerically among all occupations. Skilled shipfitters should be capable not only of lining up and assembling the structural and nonstructural parts of a vessel but also of welding and making templates and lay-outs for special forms that cannot be predetermined in the mold loft. On the Pacific coast this occupational title includes over 5,000 San Francisco Bay "flangers." According to the chief naval architect of one of the larger yards in this area, the term "flanger" is specifically differentiated from "flange turner." The latter term applies to the worker who forms angles on plates, whereas the former applies to one who lines up parts on the platens or ways preparatory to welding.

Inland yards employed the smallest proportion of shipfitters. Since the smaller landing craft made in these yards are produced by mass-production methods which require that most parts be interchangeable, this lower proportion of shipfitters is to be expected, as well as the higher-than-average proportion of laborers. Furthermore, because these craft usually contain few or no structural parts of wood, Inland yards reported the lowest proportion of carpenters.

In addition to the 10 occupations listed above, there are several that are numerically important on a regional basis: Boilermakers on the Gulf and Pacific coasts; chippers and caulkers on the Pacific coast and Great Lakes; and riggers on the Atlantic and Pacific coasts.

The importance of these occupations results in part from purely local practices as well as from the nature of the construction. For example, the Atlantic and Pacific regions, in which more large vessels are being constructed, employ a greater number of riggers than do the regions specializing primarily in smaller vessels, since heavier loads and a greater number of structural parts must be handled, lifted, and put in place on combat, auxiliary combat, and larger commercial vessels.

Wage Rates, June 1943

Approximately 60 percent of all the wage earners in private shipyards in June 1943 were paid less and 10 percent were paid more than the first-class mechanics'[6] rate of $1.20 established by the zone stabilization agreements.[6a] Although the proportions of employees at specific rates were comparatively uniform at rates of over $1.20 an hour, there was some variance, especially on the Pacific coast, where there

[6] Identified as "standard skilled mechanics" in the Gulf and Pacific coast agreements.

[6a] See p. 30 for discussion of zone stabilization agreements. Wage-rate data in this section cover only yards signatory to the agreements. These yards employed approximately 90 percent of all private-shipyard wage earners in June 1943.

was concentration of employees at $1.30–$1.35 and $1.35–$1.40. This was caused primarily by the fact that a separate labor contract prevails in the San Francisco Bay area and northward to the Canadian boundary, providing for a premium of 11.6 percent in all yards engaged in repair and conversion.

While approximately three-fifths of the shipyard wage earners in all regions combined were paid less than the rate of $1.20 in June 1943, on the Atlantic coast the proportion was three-fourths, on the Great Lakes almost two-thirds, but on the Pacific coast only about one-half. Less than 10 percent of the wage earners in Pacific coast yards received wage rates under $0.95, as compared with well over a third in the Great Lakes yards, two-fifths in Inland yards, and about 45 percent in yards on the Atlantic and Gulf coasts.

Actually, as a result of the American Federation of Labor master-contract provisions on the Pacific coast, defining not only the occupations to be paid the first-class rate but also the uniform rates for laborers ($0.88), helpers ($0.95), trainees ($1.05, $1.10, and $1.15), and practically all other production occupations,[7] there were few employees on the Pacific coast in June 1943 who received less than the rate set for laborers ($0.88) and a substantial group who received the rate paid to helpers ($0.95). In contrast, there was a concentration of employees in Gulf yards in the $0.60–$0.65 range and also a high proportion of workers paid between $0.75 and $0.80, reflecting the large number of apprentices in that region.

TABLE 18.—*Percentage Distribution of Private Shipyard Workers, by Region and Rate of Pay, June 1943*

Basic rate group	Percent of workers in private shipyards					
	All regions	Atlantic coast	Gulf coast	Pacific coast	Great Lakes	Inland
Under $0.50	(1)	(1)	(1)	(1)	0.5	0.4
$0.50 and under $0.55	0.1	0.2	(1)	(1)	(1)	.5
$0.55 and under $0.60	.1	.2	0.1	(1)	(1)	.2
$0.60 and under $0.65	1.9	1.8	9.2	0.1	.8	1.0
$0.65 and under $0.70	1.5	1.4	7.4	(1)	.9	.3
$0.70 and under $0.75	1.1	2.1	.6	.1	2.9	1.8
$0.75 and under $0.80	2.8	2.5	13.8	(1)	3.5	5.0
$0.80 and under $0.85	7.5	14.7	6.6	.1	11.1	13.0
$0.85 and under $0.90	7.2	11.8	4.8	3.2	6.2	7.6
$0.90 and under $0.95	5.0	7.9	3.7	2.0	9.2	10.6
$0.95 and under $1.00	11.5	7.6	5.1	17.7	6.0	5.2
$1.00 and under $1.05	5.5	10.3	2.9	1.2	7.8	9.1
$1.05 and under $1.10	7.6	5.8	5.7	9.9	7.1	.6
$1.10 and under $1.15	5.9	7.9	2.3	4.8	8.0	5.5
$1.15 and under $1.20	1.8	1.7	.4	2.2	1.5	.2
$1.20	30.2	16.5	31.4	44.0	26.8	30.3
$1.21 and under $1.25	.4	.4	(1)	.5	.3	.1
$1.25 and under $1.30	1.2	1.6	.6	1.0	1.2	1.2
$1.30 and under $1.35	2.9	1.5	4.4	4.0	3.0	2.0
$1.35 and under $1.40	2.3	1.0	.3	4.2	1.1	2.9
$1.40 and under $1.45	1.3	1.1	.3	1.9	1.0	.7
$1.45 and under $1.50	.9	.6	.3	1.5	.3	1.6
$1.50 and over	1.3	1.4	.1	1.6	.8	.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Average base rate	$1.066	$1.008	$0.979	$1.151	$1.041	$1.035

[1] Less than a tenth of 1 percent.

[7] See p. 33 for discussion of establishment since June 1943 of uniform rates in other regions.

The Atlantic coast also had many workers paid less than $0.80 an hour. The largest groups below $1.20 were at the $0.80–$0.85, $0.85–$0.90, and $1.00–$1.15 levels, which included, respectively, the prevailing rates for laborers, helpers, and craftsmen other than first class.

In comparing base rates by region, differences in the regional occupational structure must be kept in mind. Yards on the Atlantic coast, as compared to yards in other regions, maintained a higher percentage of craftsmen below the first class, close to the highest percentage of helpers and apprentices, and the lowest percentage of supervisory employees. (See table 16, p. 23.) Yards on the Gulf coast also had a large percentage of apprentices and a comparatively high percentage of helpers and of craftsmen below the first class.

The Pacific coast had the largest proportion of employees classified as first-class craftsmen and, in addition, had a repair and conversion work differential in the case of all employees in yards in the San Francisco area and north.

Craftsmen

The average base rates for all regions combined ranged between $1.10 and $1.20 an hour among the skilled and semiskilled craftsmen (first and other classes) in 21 of the 26 occupations shown in table 17. In only one case, that of pipe coverers, did the rate ($1.067) fall below the minimum of the range, while in 3—crane operators (over 20 tons), loftsmen, and patternmakers—the average rates were in excess of $1.20. Skilled and semiskilled patternmakers received the highest average rate, $1.374 per hour. (See table 19.)

On the Atlantic coast average rates for 17 of the occupations were below $1.10, 7 were between $1.10 and $1.20, and only 2, crane operators (over 20 tons) and patternmakers, averaged above $1.20 an hour. In comparison, on the Pacific coast, the second largest shipbuilding region, 11 occupations averaged between $1.10 and $1.20 and 13 averaged over $1.20. There were 2 for which there were not enough men reported to compute a rate. In this region, patternmakers also averaged the highest rate. Riggers on the Atlantic coast received the lowest average rate among the skilled and semiskilled groups ($1.050), while on the Pacific coast, furnacemen were the lowest-paid ($1.108).

Gulf coast yards reported 6 occupations below $1.10, 14 between $1.10 and $1.20, and only 2 above $1.20. Rates are not shown for 4 of the 26 occupations. Employees working as coppersmiths averaged the lowest rate ($1.050) while loftsmen received the highest ($1.215). There was not a sufficiently large number of patternmakers reported to warrant the presentation of a rate. Only 2 occupations (layer-out men and riggers) in Great Lakes yards received below $1.10 an hour. In this region 18 occupations averaged between $1.10 and $1.20, and 1 (patternmakers) received over $1.20. An average rate is not shown for 4 occupations.

Boilermakers received the highest average base rate in Inland yards ($1.20). Five occupations received below $1.10 and 15 between $1.10 and $1.20. Rates are not shown for five occupations. The lowest average rate paid to any group of skilled and semiskilled workers was that of $0.915 to riveters.

TABLE 19.—*Average Base Rates per Hour for Specified Occupations in Shipyards, by Region, June 1943* [1]

Occupation and class	All regions	Atlantic coast	Gulf coast	Pacific coast	Great Lakes	Inland
All occupations [2]	$1.066	$1.008	$0.979	$1.151	$1.041	$1.035
Anglesmiths	1.140	1.085	1.187	1.144	1.158	1.127
Anglesmiths' helpers	.958	.873	.792	1.075	[3]	[3]
Apprentices	.815	.799	.790	1.046	.869	.726
Blacksmiths	1.113	1.082	1.074	1.205	1.169	1.089
Blacksmiths' helpers	.878	.847	.797	.973	.906	.847
Boilermakers	1.142	1.059	1.134	1.203	1.139	1.200
Boilermakers' helpers	.896	.826	.727	.961	.891	.858
Burners	1.140	1.090	1.104	1.186	1.138	1.128
Burners' helpers	.832	.812	.725	.952	.944	.839
Carpenters (shipwrights)	1.175	1.096	1.181	1.208	1.149	1.176
Carpenters' (shipwrights) helpers	.924	.757	.723	.952	.992	[3]
Chippers and caulkers	1.115	1.074	1.134	1.169	1.138	1.122
Chippers and caulkers' helpers	.840	.799	.719	.951	.861	[3]
Coppersmiths	1.141	1.131	1.050	1.165	[3]	[4]
Coppersmiths' helpers	.880	.793	.702	.952	[4]	[4]
Crane operators, 20 tons and under	1.150	1.115	1.096	1.224	1.156	1.076
Crane operators' helpers, 20 tons and under	.833	.831	.800	[3]	.930	.894
Crane operators, over 20 tons	1.254	1.217	1.181	1.330	1.186	1.191
Crane operators' helpers, over 20 tons	.896	[3]	.898	[4]	[3]	[4]
Electricians	1.132	1.066	1.104	1.189	1.162	1.162
Electricians' helpers	.877	.831	.711	.952	.890	.898
Foremen	1.512	1.580	1.302	1.502	1.438	1.378
Furnacemen	1.103	1.099	[3]	1.108	[3]	[3]
Furnacemen's helpers	.923	.929	.786	[3]	.992	[3]
Handymen, general	.944	.944	[4]	[4]	[3]	.936
Helpers, general	.840	.827	.721	.969	.812	.851
Joiners	1.159	1.137	1.184	1.193	1.190	1.199
Joiners' helpers	.879	.793	[3]	.956	[3]	[3]
Laborers	.764	.754	.630	.887	.780	.787
Layer-out men	1.173	1.128	1.096	1.321	.997	1.158
Layer-out men's helpers	.800	.850	.713	.950	[3]	[3]
Leadermen	1.336	1.328	1.258	1.359	1.285	1.217
Learners	.864	.844	.723	1.090	.927	.756
Loftsmen	1.250	1.163	1.215	1.320	1.162	1.123
Loftsmens' helpers	.894	.785	.709	.952	.925	[3]
Machinists, outside and inside	1.132	1.087	1.103	1.208	1.124	1.108
Machinists' helpers, outside and inside	.879	.829	.728	.961	.847	.778
Molders	1.181	1.170	[3]	[3]	[3]	[3]
Molders' helpers	.844	.844	[4]	[4]	[4]	[4]
Painters	1.142	1.077	1.170	1.202	1.124	1.120
Painters' helpers	.862	.833	.737	.950	.873	.850
Patternmakers	1.374	1.331	[3]	1.551	1.449	[3]
Patternmakers' helpers	.845	[3]	[4]	[3]	[3]	[4]
Pipe coverers	1.067	1.063	1.078	[3]	[3]	1.134
Pipe coverers' helpers	.900	.900	[4]	[4]	[4]	[4]
Pipe fitters	1.131	1.077	1.104	1.193	1.109	1.157
Pipe fitters' helpers	.876	.823	.720	.957	.839	.841
Riggers	1.111	1.050	1.124	1.169	1.068	1.098
Riggers' helpers	.780	.776	.732	.950	.960	.827
Riveters	1.166	1.142	1.179	1.205	1.199	.915
Riveters' helpers	.868	.824	.750	.950	[4]	[4]
Sheet-metal workers	1.117	1 077	1.103	1.172	1.165	1.117
Sheet-metal workers' helpers	.895	.820	.705	.954	.859	.858
Shipfitters	1.125	1.055	1.100	1.188	1.105	1.106
Shipfitters' helpers	.879	.822	.710	.951	.899	.865
Supervisors [5]	1.610	1.588	1.503	1.648	1.555	1.417
Tool and die makers	1.152	1.062	[3]	1.345	[3]	[3]
Tool and die makers' helpers	.758	.754	[4]	[3]	[4]	[3]
Welders	1.125	1.075	1.095	1.165	1.130	1.093
Welders' helpers	.865	.805	.712	.953	.853	.774

[1] All skilled classes (first, second, third, and other), improvers, handymen, Pacific coast trainees, and some Gulf coast apprentices are included for each occupation without the designation "helpers", except apprentices, foremen, laborers, learners, leadermen, and supervisors.

[2] Includes all occupations and classes reported.

[3] Number of workers too small to justify presentation of an average.

[4] No employees reported for this class.

[5] Covers superintendents, supervisors, and general foremen.

Helpers

Diversity of rates is as apparent in the case of helpers as for craftsmen. This class of wage earners received an average base rate of over $0.80 an hour in 25 of the 27 occupations for which helpers were listed, in all regions together. None received an average of less than $0.75. In rates for different occupations, the range was from $0.758 for tool and die makers' helpers to $0.958 for anglesmiths' helpers.

In shipyards located on the Pacific, helpers in four occupations averaged exactly $0.95 an hour, the rate established by the master agreement. Twenty, or all helpers for which a rate is shown, received $0.95 or more. Only anglesmiths' helpers received over $1 an hour.

On the Atlantic coast, furnacemen's helpers averaged $0.929, while tool and die makers' helpers were at the bottom of the scale with $0.754 an hour. Yards on the Gulf coast showed a difference of $0.196 an hour between the extremes of the range—crane operators' helpers (over 20 tons), $0.898, and coppersmiths' helpers, $0.702.

Furnacemen's helpers employed by Great Lakes yards received an average base rate of $0.992 and topped the list in that region, whereas general helpers at $0.812 were the lowest-paid workers in this class. In Inland yards electricians' and welders' helpers, at $0.898 and $0.774, respectively, were the occupations receiving the highest and lowest base rates.

Other Groups

Rates paid to laborers by commercial shipyards in June 1943, like rates paid to mechanics and helpers, had not been affected by any of the zone agreements. On the Pacific coast, however, a rate of $0.88 an hour for laborers was provided for in the master contract. Consequently, the average rate for laborers on the Pacific coast, as of June 18, 1943, was $0.887. Base rates in the other regions, however, varied as much for laborers as for other occupations. Gulf coast yards paid the lowest rates, averaging $0.630, followed by Atlantic coast and Great Lakes yards, with $0.754 and $0.780, respectively. Inland yards paid laborers $0.787 an hour.

Rates paid to leadermen, foremen, and supervisors followed the progression expected of supervisors with varying degrees of responsibility, ranging from $1.336 for leadermen to $1.610 for supervisors.

Learners—a classification which under present conditions allows promotion eventually to a mechanic's position—received average base rates in most regions slightly above those paid to apprentices. Apprentices are also in training eventually to achieve mechanics' status. The training schedule, however, is more formalized and thorough than that for learners and is designed to enable the participant eventually to attain the status of an all-round mechanic in his occupation. In most cases learners do not attain this competence and therefore will probably not maintain the rate differential after the war. Since the apprenticeship training period is lengthy (usually 3 or 4 years), progressive stages of advancement and corresponding rates of pay have been formulated. In consequence, the average rate is lower than that paid to learners—$0.815 as compared with $0.864.

Stabilization in Wage Rates and Working Conditions[8]

Partly because the industry expands more than most others during time of war and as a result of experience gained during World War I, the shipbuilding industry was the first in which an attempt toward stabilization was made. The Shipbuilding Labor Adjustment Board was established in 1917 during a period of chaos resulting from strikes, caused among other things, by dissatisfaction over the lack of uniformity in pay and other working conditions. Although the war ended before the Board's procedures were fully matured, the experience gained by the Board was invaluable in pointing out the steps to be taken to guard against a similar situation during the present conflict.

As early as the summer of 1940 forward-looking representatives of labor, management, and Government discussed the future of the shipbuilding industry in relation to wage crises, should the defense program be intensified and war be declared. The appointment of the Shipbuilding Stabilization Committee, composed of representatives of labor, management, the procurement agencies,[9] and the National Defense Advisory Commission, was announced on November 27, 1940.

The Committee differed from its predecessor during the last war, in that management was represented, in addition to labor and the interested procurement and administrative agencies. It was felt that stabilized working conditions could best be established and maintained only if those thoroughly familiar with the shipbuilding industry were a party to all agreements. With the reorganization of the Defense Advisory Commission, the Stabilization Committee was included within the structure of the Commission's successor, the Office of Production Management, and subsequently within the War Production Board.

The Committee set out to facilitate the establishment of standards which would prevent disputes, instead of following the previously accepted procedure of not interfering until a dispute had actually arisen. By August 1941 labor, management, and the Government, through zone conferences, had together evolved a system of zone standards for four regions—the Pacific, Atlantic, and Gulf coasts, and the Great Lakes. Agreements were reached for each of the regions on eight basic points: (1) The basic rate of pay for first-class or standard skilled mechanics, (2) standard overtime provisions, (3) second- and third-shift premiums, (4) outlawing limitation of production, (5) outlawing strikes or lockouts, (6) establishment of grievance machinery, (7) provision for a training program,[10] and (8) the duration of the agreement.

Definitions of "skilled mechanics" and the establishment of uniform zone rates for other than the first-class or standard mechanics were omitted from the agreements and left to collective bargaining.[11] The original first-class mechanics' rate established in the agreements reached during 1941 for the Atlantic coast, the Pacific coast, and the

[8] From material supplied by the Shipbuilding Stabilization Committee of the War Production Board.
[9] Composed of the Navy Department and Maritime Commission, and subsequently enlarged to include the War Department.
[10] Omitted from the Atlantic coast agreement.
[11] On the Pacific coast, the master agreement concluded by the A. F. of L. with a majority of yards established rates for nearly all occupations.

Great Lakes region was $1.12 an hour. The Gulf coast rate was set at $1.07 an hour.

Each of the zone standards contained a provision for automatic wage adjustment of rates based on Bureau of Labor Statistics cost-of-living indexes. However, since the date for commencement and the date for review differed from zone to zone, it appeared early in 1942 that adherence to these provisions would throw the regions out of line with one another. The first national conference of the shipbuilding industry—with representatives of labor, management, and Government—was held in Chicago in April and May 1942, to decide this issue.

The agreement reached at this conference and subsequently ratified by the industry, established a single base rate for first-class craftsmen ($1.20) in the four shipbuilding zones. Future adjustments could be made at regular periods after review; automatic cost-of-living changes were abolished. Paul R. Porter, then chairman of the Shipbuilding Stabilization Committee, remarked at that time that "the $1.20 rate which was established represented only about half of the increase which many of the workers were entitled to under the existing unexpired agreements. In the case, however, of some others, it gave them somewhat more than would have been received at the time, though less than would probably have come to them some months later. On the whole, the Chicago amendments to zone standards represented a large sacrifice by shipyard employees made in support of the President's then newly announced program for preventing inflation." [12]

In conformity with the President's program to control the cost of living, the zone agreements were further modified at Chicago in April 1942 to encourage a 24-hour day, 7-day week production schedule. Double pay for Sunday work on new construction was abolished, and double pay was authorized only for the seventh workday; rates for holidays and the sixth day worked were limited to time and a half.

By the close of 1943 the zone standards were applied to nearly all of the large private yards in the United States, though yards in the Inland area and most small boat yards were not covered. Approximately 90 percent of all wage earners in private shipyards were working under conditions established by the agreement for their regions. Though some major strikes occurred during the inception of the program, and other minor labor disturbances have developed from time to time, the basic purposes of the Committee—to effect the maximum production with minimum disturbance in the industry—have been achieved. There is also little doubt that, except for the zone standards, the pressing need for skilled workers in a tight labor market would have carried rates considerably above levels reached at the time the Economic Stabilization Act was passed in October 1942.

Voluntary wage stabilization ceased at this point, and the second phase of the program began. Executive Order 9250 established jurisdiction over further wage adjustments in the National War Labor Board. The Committee, however, was allowed to continue such functions as were not inconsistent with the wage control of the War Labor Board. The Board did consider delegating its powers to

[12] The excerpt is taken from an address made to the American Management Association, September 30, 1942.

the Committee, subject to Board review. However, a majority of management members of the Committee felt that the voluntary nature of the Committee's authority in respect to other than rate considerations would be destroyed by such action.

Early in 1943 the War Labor Board established a tripartite Commission (labor, management, and public) to deal with shipyard wage matters and appointed the head of the Shipbuilding Stabilization Committee as chairman. Representatives of the United States Navy Department and the United States Maritime Commission acted as the other public members. The Shipbuilding Commission was reorganized [13] in August 1943, to replace the three public members after protests by the labor members that the desire of the procurement agency representatives to keep costs down would influence their decisions.

Wage Review, July 1943

As the time for the annual wage review provided for by the Chicago conference drew near, the Committee requested the War Labor Board to assume initial jurisdiction. This was done and a hearing was held in July 1943.

The I. U. M. S. W. A.[14] requested a straight 9-percent increase to compensate for cost-of-living increases; the Metal Trades Department (A. F. of L.) did not specify the amount of increase which they desired. Both unions requested that job classifications and wage-rate structures in the industry be reviewed and revised.

The former request was denied on the grounds that the workers in the industry were among the highest paid in the country, that they had already received more than the cost-of-living increase allowed under the "Little Steel" formula, and that existing wage levels precluded any claim that increases were necessary to correct substandards of living. The Board did, however, order a review of wage-rate structures.

At about the same time a Pacific coast zone conference was convened. The resulting agreements, approved by the National War Labor Board on November 3, 1943, provided for increased rates for some 30 occupations and classes on the Pacific coast. The new rates, as approved, ranged from $1.35 for blacksmiths (heavy fire) to $0.88 for laborers (sweepers and cleaners). The previously established rate of $0.88 an hour for production laborers was retained as a starting rate and a maximum of $0.95 an hour was established for the occupation. Labor and management estimated that though the increases affected some 60,000 workers, the average base rate on the west coast would be increased by less than 1 cent an hour. Increases in rates to $1.20 an hour were approved for drillers and reamers, punch and shear operators, holders-on, rivet heaters, riggers and plate hangers, and slingers and hook tenders, on the basis of an agreement by all parties that interchangeability of men in these occupations would be allowed without restriction. Adjustments in rates for other occupations to which the interchangeability of work rule did not apply were justified because of the change in duties brought about by new methods of production. For example, the extensive change-over to prefabricated parts weighing as much as 200 tons materially changed the duties of yard teamsters.

[13] For further discussion leading to the reorganization see Monthly Labor Review, August 1944, pp. 403–404.

[14] The Industrial Union of Marine & Shipbuilding Workers of America (C. I. O.)

In pursuance of the July 30 order of the War Labor Board, the Shipbuilding Commission requested the United States Bureau of Labor Statistics in the late summer of 1943 to prepare detailed tabulations of wage rates for all occupations in the shipbuilding industry. From these data the Commission evolved tentative wage-rate patterns for 41 of the major occupations on the Atlantic coast, Gulf coast, and Great Lakes regions. The following table lists the occupations designated as "standard mechanics" in the three zones.

TABLE 20.—*Occupations Designated as "Standard Mechanics" by the Shipbuilding Commission of the National War Labor Board*

Occupation	Atlantic coast	Gulf coast	Great Lakes	Occupation	Atlantic coast	Gulf coast	Great Lakes
Acetylene plant operators	------	x	------	Insulators or pipe coverers	------	x	x
Anglesmiths	[1] x	------	x	Iron workers	------	x	------
Blacksmiths	[1] x	[2] x	x	Joiners	x	x	x
Boatbuilders	x	------	------	Layer-out men	------	x	x
Boilermakers	x	x	x	Machinists (outside and inside)	x	x	x
Bricklayers or tile setters	------	x	------	Maintenance men	x	------	------
Burners	x	x	x	Millwrights	x	------	------
Carpenters	x	x	x				
Caulkers (wood)	x	x	------	Molders	[6] x	x	x
Caulkers (metal)	[3] x	------	------	Painters	x	x	x
Cement finishers	------	x	------	Pipe fitters	x	[7] x	x
Chippers	x	------	x	Riggers	x	x	x
Chippers and caulkers	x	x	x	Riveters	x	x	x
Cold pressmen	------	x	------	Roll operators	------	x	------
				Sheet-metal workers	x	[8] x	[8] x
Compressor operators	------	x	------				
Coppersmiths	------	x	------	Shipfitters	x	x	x
Crane operators	------	------	[4] x	Shipwrights	------	x	x
Drillers	[5] x	------	------	Straighteners	------	x	------
Electricians	x	x	x	Tank testers	------	x	x
Engineers (powerhouse)	------	------	x	Tinsmiths	x	------	------
Galvanizers	------	x	------	Welders	x	x	x

[1] Other than heavy fire. [2] Other than heavy forger. [3] Except in Norfolk, Va.
[4] Types of cranes to which mechanic rates apply will be determined on an individual-case basis.
[5] Except south of Baltimore. [6] Except in the New York area, where it is a premium trade.
[7] Pipe fitters and plumbers. [8] Includes tinsmiths.

Atlantic Coast

In addition, the Commission established patterns based on degree of skill for semiskilled occupations on the Atlantic coast. Rates were designated and were to be assigned to occupations on a case-to-case basis. Table 21 shows the newly established rates based on those prevailing in the Atlantic region.

TABLE 21.—*Rates Established by the Shipbuilding Commission for Certain Major Occupations on the Atlantic Coast*

Class or grade	Rates requested by the I. U. M. S. W. A. (C. I. O.)	Rates approved by Commission				
		New England	New York	Philadelphia	Baltimore	South of Baltimore
Standard mechanics:						
First class	$1.20	$1.20	$1.20	$1.20	$1.20	$1.20
Second class	1.14	1.12	1.12	1.12	1.12	1.12
Third class	1.08	1.04	1.04	1.04	1.04	1.04
Handymen: [1]						
First class	------	.98	.98	.98	.98	.98
Second class	------	.92	.92	.92	.92	.92
Third class	------	------	------	------	------	.86
Helpers:						
First class	------	.88	.88	.88	.84	.80
Second class	------	.84	.84	.84	.805	.74
Third class	[2] .90	------	------	------	------	.68
Laborers	.90	.805	.805	.805	.805	.64

[1] The union requested that this classification be eliminated, with all handymen doing third-class mechanics' work, and requested a new classification with $0.98 minimum for certain semiskilled trades where employees were not upgraded to skilled classifications. [2] Minimum.

The Commission also decided that existing premium classification rates may be modified or a job may be reclassified as a premium trade on a case-to-case basis. The effect of the new rates on incentive systems was to be similarly decided, and adjustments made accordingly.

Gulf Coast

On September 8, 1944, the Shipbuilding Commission issued its tentative conclusions for shipyards covered by the Gulf coast standards. The basic hourly rates established for the major occupational grades were as follows:

	Hourly rate		*Hourly rate*
Mechanics:		Helpers:	
First class	$1.20	First class	$0.75
Second class	1.10	Second class [1]	.68
Third class	1.00	Laborers	.63
Handymen:			
First class	.90		
Second class	.80		

[1] Beginners' rate, to be effective for 90 days.

The following were designated as premium occupations: Anglesmiths, blacksmiths (heavy forger), crane operators (gantry), loftsmen, patternmakers, sign painters, and tool and die makers. Premium pay is also to be received by employees doing specified types of welding or burning, working with mineral wool or spun glass insulation, or engaged in spray painting.

Various miscellaneous rates were established and uniform standards for an apprentice up-grading program were developed.

Great Lakes

Basic rates of $1.12 and $1.04, in addition to the existing $1.20 rate for the first class, were established for "standard skilled mechanics" in the Great Lakes region in May 1944. Two rates, $0.86 and $0.93 per hour, were set for helpers, the latter rate to be paid only in Detroit and Bay City, Mich., and Milwaukee, Wis., yards. Laborers were to receive $0.81 an hour except in the Detroit, Mich., Chicago, Ill., and Manitowoc-Sturgeon Bay, Wis., areas, where the rates were to be $0.90, $0.78, and $0.74, respectively.

Standards were also established for hiring-in rates, up-grading, and incentive systems.

Pacific Coast

By the spring of 1945, no change had taken place in the rates set in November 1943 by the master agreement on the Pacific coast. At that time, a Nation-wide wage review for the summer of 1944 was before the National War Labor Board. However, uniformity had been accomplished on the west coast to a greater degree than seemed likely in other regions.

Wage Review, December 1944

The hearing on a second review relating only to wages and working conditions on the Atlantic coast was held on December 1, 1944, by the Shipbuilding Commission of the War Labor Board, which was given jurisdiction by the Shipbuilding Committee of the War Production Board, covering all issues except that pertaining to a general wage increase. The wage issue is pending on a Nation-wide basis for determination by the War Labor Board on the basis of a hearing held on September 22, 1944.

Both the I. U. M. S. W. A. and the East Coast Alliance of Shipyard Unions were represented. The A. F. of L. presented only wage demands and therefore did not participate in the Commission's hearing. Eleven issues before the Commission for consideration were as follows:

1. Equalization of the ratio of first-class mechanics to total wage earners, as on the Pacific coast.
2. Up-grading and promotion standards equivalent to those on the Gulf and Pacific coasts.
3. Severance pay or continuous-service bonus.
4. Night-shift premiums equivalent to those prevailing on the Pacific coast.
5. Repair work differential such as exists on the Pacific coast.
6. Group insurance or sick leave.
7. Free hospitalization and wage payment for sickness or disability.
8. Elimination of North-South differential in Atlantic zone approvable rates.
9. Vacations based on annual earnings.
10. Overtime for Saturday and Sunday work as such.
11. Inclusion of the preceding issues in the Zone Standard Wage Review.

A decision on these matters has not yet been issued and there is some question as to whether the Commission or the Committee should decide them, since they relate to other than wage issues.

No more apt conclusions concerning the results of shipbuilding stabilization can be made than the statement by Paul R. Porter in his chapter on the "Shipbuilding Industry" in the forthcoming Yearbook of American Labor.[15] "In several major respects the shipbuilding industry, acting voluntarily, has served as a bellwether for policies later established by the Government for all industries. The limitation on wage advances voluntarily incorporated in the zone standards in May 1942 were at least in part a basis for the mandatory wage controls provided for in Executive Order 9250. Shortly before this, in September 1942, the President, in Executive Order 9240, accepted and applied to all war industries, the pattern developed at a Pacific coast zone shipbuilding conference in January 1942 (and extended to the whole shipbuilding industry at the National Shipbuilding Conference in Chicago in April) under which, in order to further continuous operations, Saturdays and Sundays were abolished as premium days (per se), and premiums were paid instead for the sixth and seventh days in any workweek. Joint management-labor

[15] Dryden Press, Inc., New York. This Yearbook may be available by September 3, 1945.

agreements in Pacific coast shipyards to control the migration of workers were a forerunner of similar controls established by the War Manpower Commission.

"* * * the full, balanced story is that labor relations considered as a whole were unusually satisfactory, that the pattern of voluntary stabilization through collective bargaining agreements stood up well, that through the tripartite Shipbuilding Stabilization Committee and the Shipbuilding Commission of the War Labor Board both labor and management shared with Government a responsible and influential role in policy making and administration, and that the production record was magnificent."

Merchant Vessel Program, 1942–44

Tonnage Delivered

When the full story of America's wartime shipbuilding can be told, much credit for the amazing records set must be given to the shipyards that produced merchant vessels of all types, including Liberty ships, Victory ships, regular "C"-type cargo vessels, tankers, and the many types of vessels converted to military use. Over 43½ million dead-weight tons of merchant ships of all types were delivered from January 1942 to December 1944. Approximately 19¼ million tons were delivered in 1943 alone, more than twice the 8 million tons delivered in 1942. In the peak production month of December 1943, 2,057,000 tons were delivered. Although deliveries in 1944 were 3 million dead-weight tons less than in 1943, the figure finally attained (16½ million dead-weight tons) actually represents a greater weight of vessels. More than 22 percent of the total in 1944 were military types which have a comparatively small dead weight (cargo-carrying capacity). Measured in light displacement (the weight of water a ship displaces when without cargo) the tonnage delivered in 1944 exceeds that of 1943 by 144,700 tons.

TABLE 22.—*Deliveries of Maritime Commission Vessels, January 1942–December 1944*

[Source: U. S. Maritime Commission]

Month	Dead-weight tons (in thousands)		
	1942	1943	1944
Total, 12 months	8,089.7	19,287.7	16,447.3
January	197.6	1,007.7	1,211.0
February	289.5	1,236.5	1,381.5
March	291.5	1,513.2	1,549.1
April	401.6	1,603.3	1,600.4
May	619.8	1,785.7	1,545.3
June	749.7	1,670.4	1,391.1
July	791.7	1,674.4	1,281.8
August	752.8	1,697.4	1,161.4
September	1,016.0	1,662.9	1,187.2
October	889.8	1,681.5	1,333.0
November	892.5	1,698.2	1,434.3
December	1,197.2	2,056.5	1,371.2

History of the Program

In June 1941—before enemy action could deplete our shipping pool—the United States Maritime Commission authorized the construction of over 300 Liberty ships, officially designated as the EC2–S–C1. The vessel was specifically designed to enable the utilization of mass-production shipyard methods. Standardization of structural members, elimination of all but essential equipment, the use of prefabricated parts, and the utilization of new materials not only made large-scale production possible but materially reduced the time necessary for the completion of each ship.

Although the Liberty ships were designed for general cargo purposes, emergencies have made it necessary to convert many to other purposes, such as troop transport. In the over-all length of 441 feet is installed a 9,000-horsepower steam reciprocating engine. The load draft of 27 feet allows for sufficient fuel to provide for a cruising radius of approximately 9,000 miles. While the dead-weight tonnage is 10,800, the ship's net weight is 4,380 tons. A crew of approximately 50 men and 10 officers in addition to members of the gun crews and their officers compose the personnel.

These "ugly ducklings" have proven their worth. Not only have they supplied the armed forces in all parts of the world with the necessary fighting materials but they have also shown that an adequate vessel can be produced on a mass-production basis. Although such methods were used to some extent during the last war, it was not until this war that it was definitely proved that mass production of ships could be successful. The feasibility of an all-welded cargo vessel was proved with the Liberty ships also, most of which are of welded and only some of riveted and welded construction. The Subcommittee on Ship Designs and Construction of the House Committee on the Merchant Marine and Fisheries, reported [16] that only 5 out of 2,570 Liberty's have been lost as the result of structural failures. The report further stated that some of the failures were beyond the control of the yards that built the ships, such as unusual strains brought about by operations in extremely cold waters.

Of the total of 43,800,000 tons of merchant ships delivered between January 1942 and December 1944, Liberty ships made up nearly 27,000,000 tons, or 61.5 percent. More than 2,600 Liberty ships will have been built by the end of the program, which should come in 1945. The delivery of 720 Liberty's in 1944 brought the total at the end of the year to 2,502.

With the end of the war in sight, and enemy submarines penned up in the North Sea, thoughts of faster vessels and postwar trade began to be considered in 1943. As a result, it was decided to build a more intricate vessel—the Victory ship—which was designed to provide a faster and better cargo ship for the transportation of war matériel and troops and one more suited to postwar use. The first Victory ship was launched on January 12, 1944, and was followed by 208 more in the year; about half of them were built for the military.

[16] House Committee on the Merchant Marine and Fisheries (78th Cong., 2d sess.). Rept. No. 1685 (interim report pursuant to H. Res. 52), on Investigation of Plate Fractures on Welded Ships, June 20, 1944 (p. 5).

The Victory ship has an over-all length of 455 feet, a beam of 62 feet, and a loaded draft of 28 feet. It has a cruising range of 20,500 miles and a speed of 17 knots, as compared with the 10½ knots of the Liberty ship. The dead-weight tonnage of 10,850 tons is only 50 tons greater than that of the Liberty ship. Three types of Victory ships are being constructed. Inasmuch as the man-hour requirements vary so much for the different types, each must be analyzed separately. The VC2–S–AP2 and VC2–S–AP3 are both general cargo types. The VC2–S–AP2 is turbine propelled, generating 8,500 horsepower as on regular C–2 type cargo vessels. The VC2–S–AP3 has the same type of turbine propulsion as the C–3 type cargo vessel, generating 10,000 horsepower. The VC2–S–AP5, although similar in exterior design to the other types, is fitted out as a transport, and consequently requires more man-hours to complete since facilities needed to accommodate troops must be added.

With the shift in emphasis from the emergency Liberty-ship program of 1941–43, came not only the building of faster and more complicated cargo vessels, but the conversion of cargo ships into military types. For example, though 214 C-type vessels—general cargo ships ranging from 412 to 459 feet—were delivered in 1944, 116, or more than half, had been built as, or converted to, military types by the end of the year. In addition, the Maritime Commission collaborated with the Navy Department in the construction of combat cargo and transport vessels. This program, in addition to an accelerated tanker program, will continue to be pressed in 1945. Production of oceangoing tankers in 1944 (not counting those built as military types) was 30 percent more than in 1943 and about 3½ times the number in 1942.

Man-Hour Requirements and Building Time

The Liberty Ship

The Liberty-ship program was concentrated in shipyards located on the Atlantic and Pacific coasts. Gulf coast yards, however, also participated but to a lesser degree.

By October 31, 1944, each of 9 shipyards had delivered 100 or more Liberty ships, and together they had delivered 2,104; each of 7 yards had delivered less than 100 vessels and a total of 300. An average of 604,000 man-hours per vessel was required for the 2,404 vessels; in yards delivering 100 or more, the average was 545,000 man-hours and in yards delivering less than one hundred, 982,000 man-hours. The maximum man-hour requirement for any one vessel was 3,159,000, the minimum 219,000. (See table 23.)

Yard B showed the lowest man-hour requirements of any of the yards—an average of 413,000 man-hours for each of 351 vessels. Yard C was second with 438,000 man-hours for 330 vessels; yard C also had the best record for any one ship, 219,000 man-hours. Yard H, which delivered only 126 vessels showed an average of 478,000 hours per vessel, the lowest for any yard delivering less than 300 vessels.

All yards were able to make drastic cuts in the man-hours required as more vessels were completed. Among the 4 yards which delivered more than 300 vessels, yard B required 27.3 percent as many man-hours for the thirtieth group of 10 vessels as were required for the first 10; yard D required 36.1 percent; yard C, 36.4 percent; and yard A, 47.4 percent. Yard K, which had delivered 65 vessels, showed the best improvement of all the yards for the first 50 vessels, requiring only 36.5 percent as many man-hours for the fifth group of 10 vessels as for the first group.

All yards required more than 1,000,000 man-hours for at least 1 ship, although in not all yards did the first vessel delivered require the most man-hours. The average for the first 10 vessels in all yards was 1,310,000. Thirteen yards had delivered more than 50 vessels, and the average man-hours required for the fifth group of 10 vessels was 661,000 or about half the average hours required for the first 10 vessels. Nine yards had delivered 100 or more vessels and required an average of 540,000 hours for the tenth group of 10 vessels, or 41.2 percent as many hours as were required for the first group. The average for the twentieth group of vessels delivered by four yards was 396,000 man-hours, and for the thirtieth group it was 384,000 or 29.3 percent of the average for the first 10 vessels.

The three yards that had delivered less than 50 vessels, delivered 20, 15, and 11 vessels, respectively, and then changed over to the production of other types of ships. As would be expected, these yards required a greater number of man-hours than any of the other yards—973,000 hours for 20 vessels in yard N, 1,384,000 hours for 15 vessels in yard O, and 2,261,000 hours for 11 vessels in yard P.

It is probable that the 219,000 man-hours required for one vessel delivered by yard C will stand as the fewest number of man-hours required to build a Liberty ship. None of the yards still building Liberty ships have approached this figure and it is doubtful if any of them will.

TABLE 23.—*Average Man-Hours Required To Build EC–2 Cargo Vessels (Liberty Ships) Delivered Through Oct. 31, 1944, by Yards* [1]

Vessels in order of delivery dates	Average man-hours (in thousands) per vessel								
	Total, all yards	Yards having delivered—		Yards having delivered 100 or more vessels					
		100 or more vessels	Less than 100 vessels	Yard A	Yard B	Yard C	Yard D	Yard E	Yard F
All vessels, average	604	545	982	566	413	438	559	700	723
Vessels Nos.—									
1 to 10	1,310	1,067	1,621	1,024	1,009	899	1,241	1,395	1,217
11 to 20	931	854	1,053	818	809	749	1,209	1,022	973
21 to 30	776	749	838	732	687	656	915	935	924
31 to 40	692	691	694	692	635	613	749	847	949
41 to 50	661	663	655	673	590	661	820	772	750
51 to 60	628	626	636	655	598	606	694	772	718
61 to 70	610	602	660	642	573	553	552	777	700
71 to 80	574	572	697	625	571	502	550	720	661
81 to 90	569	569	-------	622	569	479	571	665	710
91 to 100	540	540	-------	616	544	437	515	599	690
101 to 110	524	524	-------	608	493	418	510	613	652
111 to 120	488	488	-------	593	456	401	494	528	620
121 to 130	485	485	-------	581	379	377	498	552	593
131 to 140	490	490	-------	567	331	392	487	526	577
141 to 150	475	475	-------	559	321	402	501	519	550
151 to 160	473	473	-------	549	319	385	492	550	545
161 to 170	454	454	-------	537	314	368	458	519	530
171 to 180	421	421	-------	527	311	361	420	454	[2] 525
181 to 190	402	402	-------	517	313	348	413	[3] 427	-------
191 to 200	396	396	-------	515	301	348	421	-------	-------
201 to 210	396	396	-------	510	293	354	425	-------	-------
211 to 220	397	397	-------	525	288	357	417	-------	-------
221 to 230	400	400	-------	536	284	363	417	-------	-------
231 to 240	403	403	-------	535	287	361	430	-------	-------
241 to 250	396	396	-------	511	292	343	438	-------	-------
251 to 260	391	391	-------	502	298	323	441	-------	-------
261 to 270	384	384	-------	499	282	313	440	-------	-------
271 to 280	375	375	-------	495	270	301	433	-------	-------
281 to 290	377	377	-------	494	266	300	447	-------	-------
291 to 300	384	384	-------	485	275	327	448	-------	-------
301 to 310	390	390	-------	494	300	337	[3] 456	-------	-------
311 to 320	386	386	-------	496	296	365	-------	-------	-------
321 to 330	414	414	-------	493	285	464	-------	-------	-------
331 to 340	376	376	-------	466	286	-------	-------	-------	-------
341 to 350	397	397	-------	466	328	-------	-------	-------	-------
351 to 360	464	464	-------	474	[4] 364	-------	-------	-------	-------
361 to 370	[5]	[5]	-------	479	-------	-------	-------	-------	-------
371 to 380	[5]	[5]	-------	442	-------	-------	-------	-------	-------
381 to 390	[5]	[5]	-------	[6] 450	-------	-------	-------	-------	-------
Man-hours per vessel:									
Maximum	3,159	1,596	3,159	1,199	1,164	1,095	1,532	1,596	1,529
Minimum	219	219	529	409	247	219	406	406	525
Number of vessels delivered	2,404	2,104	300	384	351	330	306	186	173

See footnotes at end of table.

TABLE 23.—*Average Man-Hours Required To Build EC–2 Cargo Vessels (Liberty Ships) Delivered Through Oct. 31, 1944, by Yards* [1]—Continued

Vessels in order of delivery dates	Average man-hours (in thousands) per vessel—Continued									
	Yards having delivered 100 or more vessels—Con.			Yards having delivered less than 100 vessels						
	Yard G	Yard H	Yard I	Yard J	Yard K	Yard L	Yard M	Yard N	Yard O	Yard P
All vessels, average	535	478	722	867	963	897	891	973	1,384	2,261
Vessels Nos.—										
1 to 10	915	740	1,164	1,342	1,837	1,667	1,571	1,057	1,528	2,347
11 to 20	644	566	898	1,026	1,135	1,055	1,106	889	[7] 1,095	[4] 1,404
21 to 30	564	601	727	895	928	781	746	------	------	------
31 to 40	558	517	658	743	745	666	620	------	------	------
41 to 50	592	473	640	692	670	651	607	------	------	------
51 to 60	558	452	577	707	645	594	[3] 570	------	------	------
61 to 70	536	422	660	700	[7] 601	[4] 553	------	------	------	------
71 to 80	450	418	648	[8] 697	------	------	------	------	------	------
81 to 90	430	403	680	------	------	------	------	------	------	------
91 to 100	409	392	661	------	------	------	------	------	------	------
101 to 110	390	395	633	------	------	------	------	------	------	------
111 to 120	414	398	------	------	------	------	------	------	------	------
121 to 130	470	[3] 401	------	------	------	------	------	------	------	------
131 to 140	[9] 562	------	------	------	------	------	------	------	------	------
Man-hours per vessel:										
Maximum	1,200	1,073	1,424	1,701	2,279	2,488	1,878	1,148	1,714	3,159
Minimum	367	368	527	660	581	551	529	798	950	1,404
Number of vessels delivered	138	126	110	72	65	61	56	20	15	11

[1] Excludes vessels of 1 shipyard which delivered only 2 EC–2 vessels; excludes all modified EC–2 vessels.
[3] Average for 3 vessels.
[3] Average for 6 vessels.
[4] 1 vessel.
[5] 1 yard only.
[6] Average for 4 vessels.
[7] Average for 5 vessels.
[8] Average for 2 vessels.
[9] Average for 8 vessels.

The number of days between keel laying and delivery of Liberty ships was reduced just as drastically as the man-hours (table 24). The average time between keel laying and delivery for all 2,404 vessels was 62 days. The greatest number of days for any 1 vessel was required by yard F (333 days) and the fewest by yard C (21 days). The average time for the 2,104 vessels delivered by the 9 yards that delivered 100 or more vessels each was 57 days. The average for the first vessel delivered in these 9 yards was 237 days, while the average for the first 10 vessels was reduced to 205 days. The average for the fifth group of 10 vessels was only 59 days and for the tenth group, 51 days. The 4 yards that had delivered as many as 200 vessels required an average of 32 days for the twentieth group. Probably because the yards were shifting to other types of vessels, these same 4 yards required more time (36 days) for the group of vessels Nos. 291 to 300.

Yard B had the best average, 41 days for 351 vessels, Yard C was second with an average of 46 days for 330 vessels, and G was third with an average of 48 days for 138 vessels. Yard A, which delivered the greatest number of vessels (384), was nevertheless only fourth, with an average of 55 days.

TABLE 24.—*Average Number of Days, from Keel Laying to Delivery, for EC–2 Cargo Vessels (Liberty Ships) Delivered Through Oct. 31, 1944, by Yards* [1]

Vessels in order of delivery dates	Average number of days per vessel								
	Total, all yards	Yards having delivered—		Yards having delivered 100 or more vessels					
		100 or more vessels	Less than 100 vessels	Yard A	Yard B	Yard C	Yard D	Yard E	Yard F
All vessels, average	62	57	100	55	41	46	61	75	73
First vessel	-------	-------	-------	245	160	253	274	280	314
Vessels Nos.—									
1 to 10	203	205	201	217	163	224	266	209	262
11 to 20	109	120	91	173	103	143	191	106	99
21 to 30	80	85	69	121	66	86	120	101	83
31 to 40	66	67	63	93	56	60	77	82	71
41 to 50	60	59	63	66	47	56	65	68	67
51 to 60	55	54	59	61	43	54	61	63	62
61 to 70	54	54	59	55	46	47	56	66	56
71 to 80	53	53	58	47	48	44	56	62	59
81 to 90	55	55	-------	61	46	40	52	64	64
91 to 100	51	51	-------	59	45	38	51	58	56
101 to 110	48	48	-------	46	42	35	50	58	56
111 to 120	46	46	-------	46	39	35	46	66	62
121 to 130	47	47	-------	42	36	41	44	61	51
131 to 140	49	49	-------	42	35	50	46	54	51
141 to 150	45	45	-------	41	34	47	46	56	47
151 to 160	44	44	-------	42	36	32	43	60	51
161 to 170	44	44	-------	46	34	29	41	63	51
171 to 180	40	40	-------	40	32	28	36	59	[2] 49
181 to 190	36	36	-------	37	30	28	36	[2] 57	-------
191 to 200	32	32	-------	36	28	28	37	-------	-------
201 to 210	32	32	-------	34	28	29	35	-------	-------
211 to 220	32	32	-------	34	28	29	38	-------	-------
221 to 230	32	32	-------	34	28	28	39	-------	-------
231 to 240	32	32	-------	35	28	28	38	-------	-------
241 to 250	33	33	-------	36	28	28	41	-------	-------
251 to 260	32	32	-------	31	30	26	41	-------	-------
261 to 270	33	33	-------	32	27	23	48	-------	-------
271 to 280	33	33	-------	39	27	23	43	-------	-------
281 to 290	36	36	-------	45	28	27	45	-------	-------
291 to 300	36	36	-------	41	28	30	45	-------	-------
301 to 310	37	37	-------	43	30	33	[2] 47	-------	-------
311 to 320	35	35	-------	43	29	34	-------	-------	-------
321 to 330	33	33	-------	44	27	29	-------	-------	-------
331 to 340	38	38	-------	46	29	-------	-------	-------	-------
341 to 350	41	41	-------	48	34	-------	-------	-------	-------
351 to 360	47	47	-------	48	[4] 32	-------	-------	-------	-------
361 to 370	[5]	[5]	-------	50	-------	-------	-------	-------	-------
371 to 380	[5]	[5]	-------	51	-------	-------	-------	-------	-------
381 to 390	[5]	[5]	-------	[6] 48	-------	-------	-------	-------	-------
Days per vessel:									
Maximum	333	333	332	250	205	257	288	308	333
Minimum	21	21	44	29	25	21	32	49	44
Number of vessels delivered	2,404	2,104	300	384	351	330	306	186	173

See footnotes at end of table.

TABLE 24.—*Average Number of Days, from Keel Laying to Delivery, for EC-2 Cargo Vessels (Liberty Ships) Delivered Through Oct. 31, 1944, by Yards*[1]—Continued

Vessels in order of delivery dates	Average number of days per vessel—Continued									
	Yards having delivered 100 or more vessels—Continued			Yards having delivered less than 100 vessels						
	Yard G	Yard H	Yard I	Yard J	Yard K	Yard L	Yard M	Yard N	Yard O	Yard P
All vessels, average	48	65	85	93	86	93	96	138	112	208
First vessel	98	272	243	268	259	306	238	292	127	232
Vessels Nos.—										
1 to 10	91	243	172	229	207	248	194	189	132	209
11 to 20	59	101	103	95	85	80	108	87	[7] 72	[4] 201
21 to 30	44	77	71	67	60	61	89	------	------	------
31 to 40	43	64	60	62	69	57	62	------	------	------
41 to 50	48	50	61	70	61	61	54	------	------	------
51 to 60	44	44	53	69	55	55	[3] 55	------	------	------
61 to 70	47	35	74	65	[7] 47	[4] 54	------	------	------	------
71 to 80	43	39	80	[8] 58	------	------	------	------	------	------
81 to 90	38	37	93	------	------	------	------	------	------	------
91 to 100	35	32	83	------	------	------	------	------	------	------
101 to 110	32	33	80	------	------	------	------	------	------	------
111 to 120	35	38	------	------	------	------	------	------	------	------
121 to 130	58	[3] 38	------	------	------	------	------	------	------	------
131 to 140	[9] 65	------	------	------	------	------	------	------	------	------
Days per vessel:										
Maximum	99	304	253	297	269	332	257	292	173	299
Minimum	29	30	44	49	44	50	49	71	60	125
Number of vessels delivered	138	126	110	72	65	61	56	20	15	11

[1] Excludes vessels of 1 shipyard which delivered only 2 EC-2 vessels; excludes all modified EC-2 vessels.
[2] Average for 3 vessels.
[3] Average for 6 vessels.
[4] 1 vessel.
[5] 1 yard only.
[6] Average for 4 vessels.
[7] Average for 5 vessels.
[8] Average for 2 vessels.
[9] Average for 8 vessels.

Considerable interest has been evidenced as to why the average time needed to build Liberty ships has varied so considerably between yards. Actually no one reason alone can be cited as the controlling one and any answer is complicated by the need for considering the specific characteristics of each and every yard, its organization and administration, and the exigencies of its development.

In general, however, the figures cited above have shown without a doubt that among the most important factors affecting man-hour requirements to build Liberty ships has been experience. The yards which were the first to enter the field have had the time and experience to develop additional time-saving techniques.

Experience alone would not be decisive in the absence of other favorable circumstances, however. The yards reporting lowest man-hours per vessel were constructed on sites, generally waste land, which permitted expansion and allowed room for the inclusion and efficient arrangement of all necessary facilities at the location of the yard. Fabricating shops and subassembly yards could be directly connected with the ways upon which the final assembly job is done.

This close proximity of the essential components enabled the yards to fabricate much larger sections than would have been possible had the prefabricating facilities been at some distance either from the yard or from the ways. Transportation problems were eliminated and more efficient sequence planning was made possible through the extensive use of prefabricated sections. The use of land facilities close by made it possible to assemble the parts in large sections, thereby decreasing the difficulties of final assembly. As a result, the ships could be moved off the ways more quickly. While total man-hours per vessel are the best indication of over-all efficiency, the number of days required from the laying of the keel to delivery is a good indication of one aspect of efficiency—sequence planning.

Another condition which contributed materially to the low man-hours in some yards was the size and carrying capacity of the cranes. Eighty-ton lifts were used in these yards, as compared to the more usual 20-ton cranes, and made possible the fabrication of entire deck houses on land, even before the keel was laid down. Use of two of these monsters made possible the prefabrication of sections weighing considerably over 80 tons.

One final point which helped achieve lower hours was the use of all-welded construction as contrasted to the combined riveted and welded method. Since the latter requires the punching, drilling, and reaming of thousands of holes and a much finer lining-up job, the man-hours per vessel are higher than in yards building a comparable number of ships and using all-welded construction.

The Victory Ship

Although the Victory-ship program has been in existence less than 1 year, enough vessels (209) have been delivered to warrant a preliminary analysis of man-hour requirements and building time. During the coming year approximately 300 more of these vessels will be delivered by United States shipyards.

As of December 31, 1944, six shipyards had together delivered 30 AP2's, 74 AP3's, and 105 AP5's. Man-hour requirements for 126 of these vessels are shown in table 25. By October 31, 1944, 3 shipyards had delivered 74 of the general cargo type vessels (VC2–S–AP3), requiring an average of 850,000 hours per vessel. Yard C required the maximum number of hours for any 1 vessel, 1,630,000 hours and, although producing only 10 vessels, also required the fewest hours, 642,000. Yards A and B each produced 32 vessels. The average of the last 2 vessels produced by yard A was 36.7 percent less than the average of the first 5, as compared with a decrease of 25.5 percent for yard B.

By October 31, 1944, 3 shipyards had delivered 36 of the VC2–S–AP5 (transport) type. The average for the 36 was 1,526,000 man-hours or 79.5 percent more than the average for the 74 general cargo type ships VC2–S–AP3. The maximum required for this type was 2,627,000 man-hours by yard E and the minimum was 1,011,000, by yard D.

Although only 16 vessels of the general cargo type VC2–S–AP2 had been delivered, indications are that man-hour requirements for this type may soon be nearly as low as for Liberty ships. In fact, the average of 668,000 man-hours for the 16 vessels was lower than the average for the first 769 Liberty vessels built by 10 different yards,

TABLE 25.—*Average Number of Man-Hours and of Days, From Keel Laying to Delivery, for Construction of Victory Ships Delivered Through Oct. 31, 1944, by Yards*

Vessels in order of delivery dates	VC2-S-AP3 (general cargo)							
	Average man-hours (thousands)				Average days (keel laying to delivery)			
	Total, all yards	Yard A	Yard B	Yard C	Total, all yards	Yard A	Yard B	Yard C
All vessels, average	850	866	811	926	103	108	84	149
Vessels Nos.—								
1 to 5	1,100	1,118	1,042	1,140	129	120	107	159
6 to 10	846	949	878	712	116	113	96	139
11 to 15	841	880	802	--------	105	114	95	--------
16 to 20	788	808	770	--------	94	106	81	--------
21 to 25	735	771	699	--------	84	100	67	--------
26 to 30	711	732	691	--------	82	99	65	--------
30 to 35	[1] 741	[2] 708	[2] 776	--------	[1] 78	[2] 90	[2] 65	--------
Maximum per vessel	1,630	1,273	1,285	1,630	180	136	109	180
Minimum per vessel	642	694	673	642	60	86	60	129
Number of vessels delivered	74	32	32	10	74	32	32	10

Vessels in order of delivery dates	VC2-S-AP5 (transport)							
	Average man-hours (thousands)				Average days (keel laying to delivery)			
	Total, all yards	Yard D	Yard E	Yard A	Total, all yards	Yard D	Yard E	Yard A
All vessels, average	1,526	1,429	1,662	1,596	138	130	147	151
Vessels Nos.—								
1 to 5	1,792	1,811	1,876	1,689	148	138	149	156
6 to 10	1,426	1,456	1,457	[2] 1,364	141	141	144	[2] 137
11 to 15	[3]	1,288	--------	--------	[3]	133	--------	--------
16 to 20	[3]	[1] 1,094	--------	--------	[3]	[1] 101	--------	--------
Maximum per vessel	2,627	2,029	2,627	1,887	167	155	151	167
Minimum per vessel	1,011	1,011	1,395	1,339	88	88	140	133
Number of vessels delivered	36	19	10	7	36	19	10	7

Vessels in order of delivery dates	VC2-S-AP2 (general cargo)					
	Average man-hours (thousands)			Average days (keel laying to delivery)		
	Total, all yards	Yard C	Yard F	Total, all yards	Yard C	Yard F
All vessels, average	668	560	807	105	107	103
Vessels Nos.—						
1 to 5	772	595	849	112	114	109
6 to 10	[4] 611	[1] 517	[2] 704	[4] 95	[1] 100	[2] 90
Maximum per vessel	988	635	988	117	117	114
Minimum per vessel	497	497	574	81	90	81
Number of vessels delivered	16	9	7	16	9	7

[1] Average for 4 vessels.
[2] Average for 2 vessels.
[3] 1 yard only.
[4] Average for 6 vessels.

and was only 64,000 hours, or 10.6 percent greater than the average for the 2,404 Liberty ships delivered by October 31, 1944. The reason for this is that the VC2–S–AP2 is practically a sister ship to the Liberty, being about the same weight and basically similar in design. To be sure, many refinements in design have been incorporated in the Victory, as well as a more powerful engine which increases its speed. However, the fundamental resemblance which the general cargo Victory bears to the Liberty has made it possible for yards to carry over to the building of Victory's the improved techniques developed in the construction of Liberty ships at a time when building efficiency on these ships was at its highest.

The number of days required to build Victory ships ranged from 180 days required by yard C to produce an AP3 vessel to 60 days required by yard B for the same type vessel. The average for the 74 AP3 type vessels was 103 days, as compared with 138 for the AP5 vessels and 105 for the AP2's.

Maritime Commission Shipyard Employees' Suggestion Program

On August 11, 1942, the United States Maritime Commission approved a policy of awarding prizes to shipyard employees who make important suggestions for promoting efficiency and curtailing waste—thus also providing the individual worker with a real sense of his stake in the war.

The program provides that employees be encouraged to suggest methods for increasing efficiency, curtailing waste, and promoting health, safety, housing, and transportation; and that for each suggestion accepted and put into practice the labor-management committee of the yard is authorized to reward the worker with a minimum consideration of $25 and a maximum of $100. Each yard participating in the program is limited to a monthly total of $250 in cash, or the equivalent in war bonds at issue value, after deduction of all withholding taxes. A labor-management committee is not obliged to make any awards if the quality of suggestions does not warrant.

If labor-management committees believe more meritorious suggestions have been made during a month than can be rewarded by the total they are authorized to spend, they may forward the additional suggestions to the Maritime Commission's Shipyard Efficiency Awards Committee in Washington with a recommendation as to the amount of the award. This Committee, after reviewing the suggestion, may approve further awards of $25 to $100. Provision is also made for certificates of merit for meritorious suggestions, and citations for suggestions resulting in outstanding accomplishments.

All shipyard employees, except corporate officers, are eligible for the awards authorized. The subject matter of suggestions is not limited to increasing efficiency, curtailing waste, and promoting health, safety, housing, and transportation—suggestions involving change in design of vessels, however, are not included. Employees making suggestions involving patentable devices surrender no right to pursue applications for patents, but the Maritime Commission and its contractors and subcontractors may use such devices without payment of any fees, licenses, royalties, or other expense for the duration of the emergency and 6 months thereafter.

From the beginning of the program, August 11, 1942, to December 31, 1944, over 3,000 suggestions were reported. They resulted in a saving of over 31 million man-hours and 44 million dollars—sufficient time and money to build and pay for several additional Liberty ships. The total amount in cash and bonds awarded during the period stated was approximately $143,000.

Workers' suggestions have ranged from the comparatively simple to the highly technical. One of them is reproduced here to give an idea of their quality.

LABOR-MANAGEMENT COMMITTEE SUGGESTION REPORT TO THE UNITED STATES MARITIME COMMISSION

NAME OF YARD: ----------
SUBMITTED BY: ----------
PRIZE AWARDED: ----------
MONTH FOR WHICH AWARD WAS MADE: ----------
SHORT TITLE OF SUGGESTION: Pipe-cutting tool----------

PURPOSE: To cut a pipe into two parts, and bevel cuts at the same time.
DESCRIPTION: A specially-made die with two cutting edges.
OLD METHOD: A die with only a straight cutting edge was used in the machine
NEW METHOD: A double-edge cutting die is used in the pipe-cutting machine.
RESULTS AND SAVING: This has speeded up the work to such an extent that all pipe necessary for the ships can be cut in one shift, making a saving of 432 man-hours per hull.
DATE PUT INTO OPERATION: ----------

Among the host of ideas were those for burning attachments, unionmelt attachments, boiler-testing procedures, and a milling attachment for an air drill.

Important also, along with the saving in hours and dollars, is the boost this program has given to employee morale. The fact that individual workers have been given an opportunity to earn extra money is, on the whole, rather insignificant. Much more important is the fact that their ideas are being used for the purposes stated in the policy of the program. This has given them a feeling of more direct and vital participation in the war effort than they would otherwise have experienced, in spite of their already great production achievements as workers.

The Destroyer Escort—Man-Hour Requirements and Building Time

One of the most important parts of our naval construction program during 1943 and early 1944 was the destroyer-escort program. The speedy, hard-punching destroyer escort was developed for convoy duty and for use in combating the submarine menace. Although in June 1944 the destroyer escort program was drastically curtailed and many contracts canceled, a large number of these vessels have taken their places with the fleet and have done a spendid job.

As of October 31, 1944, 10 private shipyards had together delivered 348 destroyer-escort vessels, for which man-hour requirements are presented in table 26. The average number of man-hours required for these 348 vessels was 873,000. The average for the first 3 vessels delivered in all yards was 1,265,000 man-hours, as against an average of 954,000 man-hours for the third group of 3 vessels, or 75.4 percent

of the hours required for the first group of 3. For the 6 yards that had delivered 15 or more vessels, the average for the fifth group of 3 vessels had been reduced to 878,000 man-hours. The average for the tenth group, delivered by 4 yards, was still lower—818,000 man-hours. Only 2 yards had delivered as many as 75 vessels and the average for this twenty-fifth group of 3 vessels was 618,000 man-hours, less than half the average for the first 3.

Yard A, which had delivered 91 vessels—more than any of the others—had the fourth lowest average of man-hours required (749,000); yard E had the lowest average, 508,000 hours for 17 vessels; and yard G was second with 538,000 hours for 12 vessels. Yard I had the highest average, 1,329,000 hours for 12 vessels.

An average of 194 days from keel laying to delivery was required for the 348 vessels. Yard G had the best record, with an average of 88 days for only 12 vessels; yard B was second with an average of 157 days, or four-fifths more for 75 vessels. Yard J was highest, with an average of 405 days for 8 vessels.

TABLE 26.—*Average Man-Hours Required for Construction of Destroyer-Escort Vessels Delivered Through Oct. 31, 1944, by Yards*

Vessels in order of delivery dates	Average man-hours (in thousands) per vessel										
	Total, all yards	Yard A	Yard B	Yard C	Yard D	Yard E	Yard F	Yard G	Yard H	Yard I	Yard J
All vessels, average	873	749	681	1,139	1,084	508	1,202	538	794	1,329	960
Vessels Nos.—											
1 to 3	1,265	1,129	1,519	2,141	1,346	727	1,852	563	687	1,539	1,149
4 to 6	1,062	995	1,174	1,798	1,213	511	1,434	546	740	1,327	886
7 to 9	954	848	1,025	1,413	1,149	447	1,175	507	871	1,264	[1] 786
10 to 12	912	817	930	1,455	1,145	414	852	537	876	1,186	------
13 to 15	878	799	786	1,408	1,099	476	698	------	------	------	------
16 to 18	882	763	758	1,227	1,067	[1] 453	------	------	------	------	------
19 to 21	908	762	733	1,086	1,050	------	------	------	------	------	------
22 to 24	876	749	689	1,050	1,014	------	------	------	------	------	------
25 to 27	824	730	655	988	921	------	------	------	------	------	------
28 to 30	818	732	677	943	921	------	------	------	------	------	------
31 to 33	777	627	654	921	905	------	------	------	------	------	------
34 to 36	828	780	636	947	949	------	------	------	------	------	------
37 to 39	937	753	603	1,137	1,254	------	------	------	------	------	------
40 to 42	916	726	553	1,240	1,144	------	------	------	------	------	------
43 to 45	822	697	498	1,007	1,087	------	------	------	------	------	------
46 to 48	673	649	465	906	------	------	------	------	------	------	------
49 to 51	689	677	555	835	------	------	------	------	------	------	------
52 to 54	668	668	547	789	------	------	------	------	------	------	------
55 to 57	677	670	557	804	------	------	------	------	------	------	------
58 to 60	668	684	526	795	------	------	------	------	------	------	------
61 to 63	629	703	497	[2] 800	------	------	------	------	------	------	------
64 to 66	600	714	486	------	------	------	------	------	------	------	------
67 to 69	589	699	478	------	------	------	------	------	------	------	------
70 to 72	584	692	476	------	------	------	------	------	------	------	------
73 to 75	618	683	552	------	------	------	------	------	------	------	------
76 to 78	[3]	712	------	------	------	------	------	------	------	------	------
79 to 81	[3]	728	------	------	------	------	------	------	------	------	------
82 to 84	[3]	722	------	------	------	------	------	------	------	------	------
85 to 87	[3]	731	------	------	------	------	------	------	------	------	------
88 to 90	[3]	795	------	------	------	------	------	------	------	------	------
91 to 93	[3]	[2] 814	------	------	------	------	------	------	------	------	------
Man-hours per vessel:											
Maximum	2,224	1,187	1,621	2,224	1,390	963	2,180	595	951	1,714	1,266
Minimum	396	630	457	782	888	396	666	487	654	1,166	786
Number of vessels delivered	348	91	75	61	45	17	15	12	12	12	8

[1] Average for 2 vessels.
[2] 1 vessel.
[3] 1 yard only.

TABLE 27.—*Average Number of Days from Keel Laying to Delivery, for Destroyer-Escort Vessels Delivered Through Oct. 31, 1944, by Yards*

Vessels in order of delivery dates	Average number of days per vessel										
	Total, all yards	Yard A	Yard B	Yard C	Yard D	Yard E	Yard F	Yard G	Yard H	Yard I	Yard J
All vessels, average	194	200	157	191	164	191	248	88	256	355	405
Vessels Nos. —											
1 to 3	266	301	305	336	215	193	319	131	241	280	344
4 to 6	269	336	243	316	227	164	293	86	249	333	442
7 to 9	242	238	214	262	191	188	259	62	245	384	[1] 442
10 to 12	225	238	201	241	168	203	194	72	287	421	------
13 to 15	200	236	185	240	176	189	174	------	------	------	------
16 to 18	194	232	174	215	141	[1] 214	------	------	------	------	------
19 to 21	199	240	180	200	177	------	------	------	------	------	------
22 to 24	176	228	172	188	114	------	------	------	------	------	------
25 to 27	157	211	[2] 129	180	107	------	------	------	------	------	------
28 to 30	161	217	158	160	109	------	------	------	------	------	------
31 to 33	144	200	[3] 124	140	113	------	------	------	------	------	------
34 to 36	148	188	157	126	119	------	------	------	------	------	------
37 to 39	162	202	151	133	162	------	------	------	------	------	------
40 to 42	179	187	138	194	197	------	------	------	------	------	------
43 to 45	177	183	131	151	244	------	------	------	------	------	------
46 to 48	143	162	121	145	------	------	------	------	------	------	------
49 to 51	138	158	109	146	------	------	------	------	------	------	------
52 to 54	135	147	120	138	------	------	------	------	------	------	------
55 to 57	143	166	104	158	------	------	------	------	------	------	------
58 to 60	147	177	100	165	------	------	------	------	------	------	------
61 to 63	143	177	103	[4] 162	------	------	------	------	------	------	------
64 to 66	159	183	134	------	------	------	------	------	------	------	------
67 to 69	164	187	140	------	------	------	------	------	------	------	------
70 to 72	167	187	146	------	------	------	------	------	------	------	------
73 to 75	186	189	182	------	------	------	------	------	------	------	------
76 to 78	([5])	185	------	------	------	------	------	------	------	------	------
79 to 81	([5])	177	------	------	------	------	------	------	------	------	------
82 to 84	([5])	167	------	------	------	------	------	------	------	------	------
85 to 87	([5])	151	------	------	------	------	------	------	------	------	------
88 to 90	([5])	159	------	------	------	------	------	------	------	------	------
91 to 93	([5])	[4] 163	------	------	------	------	------	------	------	------	------
Days per vessel:											
First vessel	------	283	284	322	208	242	318	129	228	263	290
Minimum	25	116	25	100	101	153	166	57	228	263	290
Number of vessels delivered	348	91	75	61	45	17	15	12	12	12	8

[1] Average for 2 vessels.
[2] 1 vessel in group delivered in 54 days.
[3] 1 vessel in group delivered in 25 days.
[4] 1 vessel.
[5] 1 yard only.

Frequency of Industrial Injuries in Shipyards, 1943 and 1944[17]

Data are presented in table 28 showing the frequency rates of industrial injuries in private shipyards and United States navy yards for 1943 and the first 10 months of 1944. The rates as presented represent the average number of industrial injuries per million man-hours worked.

During 1943, the annual rate for all private shipyards was 31.2 injuries per million man-hours worked. Yards with Maritime Commission contracts had a rate of 32.6, as compared with 28.8 for private shipyards with Navy Department contracts. The rate of 15.2 for United States navy yards was lower than the rate for either group of private yards.

During the first 10 months of 1944, the rates for all groups of yards were much lower than the 1943 annual rate, and they have been de-

[17] From data supplied by the Industrial Hazards Division of the U. S. Bureau of Labor Statistics.

creasing steadily since July. United States navy yards still had the lowest rates, ranging from 11.2 in January to 15.2 in August. Private shipyards with Navy contracts showed rates ranging from 18.5 in October to 25.0 in May, while the rates in yards with Maritime Commission contracts were from 21.3 in September to 28.0 in May. The 10-month rate for all private shipyards was 23.8. Though shipbuilding is in several aspects more hazardous than most other industries and has, besides, undergone tremendous expansion and reorganization during the war, the injury frequency rate in private shipyards for the first 10 months of this year was lower than in 33 manufacturing industries out of a total of 89 for which data are reported.

TABLE 28.—*Industrial Injury Frequency Rates for Private Shipyards and United States Navy Yards, Year 1943 and January–October 1944* [1]

[Source: Industrial Hazards Division of the U. S. Bureau of Labor Statistics]

Type of contract and region	1943	1944										
	Annual rate	Rate January–October	January	February	March	April	May	June	July	August	September	October
Private shipyards, total	31.2	23.8	23.7	24.2	24.5	24.5	26.8	24.9	25.1	23.2	20.5	20.4
With U. S. Maritime Commission contracts	32.6	24.5	25.5	25.5	25.5	25.2	28.0	25.6	25.0	23.4	21.3	21.5
Atlantic region [2]	32.6	27.5	21.5	23.9	26.0	27.3	32.1	34.8	32.2	30.1	25.3	24.3
Gulf region	31.0	20.3	19.2	21.4	18.5	21.6	22.8	19.6	17.7	17.6	16.9	17.6
Pacific region	33.9	25.9	32.0	29.3	28.8	26.5	29.3	24.3	26.6	24.0	22.2	23.3
Great Lakes region	24.1	18.1	17.8	24.4	24.3	18.3	16.8	17.4	18.3	17.4	16.3	12.4
With U. S. Navy Department contracts	28.8	22.7	21.0	22.4	22.8	23.5	25.0	23.8	25.2	23.0	19.0	18.5
Naval District No.—												
1	64.3	34.7	37.2	67.9	62.3	29.8	48.7	54.0	41.0	38.1	24.1	24.2
3	24.6	22.0	16.3	20.5	20.4	28.7	25.6	29.0	25.4	25.2	20.7	18.9
4	21.1	9.4	9.3	8.5	8.7	9.4	7.9	10.1	10.3	10.3	9.3	8.9
5	48.0	32.1	24.3	34.7	33.4	30.4	32.5	33.6	38.9	38.0	42.1	8.7
6	39.5	28.6	28.5	19.3	48.0	32.6	33.2	27.8	31.5	26.8	13.5	12.4
7	48.8	49.8	39.2	50.4	46.0	38.9	73.7	41.6	54.3	40.5	56.0	57.7
8	27.6	22.1	20.1	22.5	26.4	24.3	27.1	27.0	28.9	29.5	18.4	13.4
9	20.7	18.8	18.6	18.9	19.8	20.0	20.7	18.5	20.9	17.0	17.6	15.0
11	26.5	17.4	23.3	17.7	17.3	14.2	16.8	14.5	15.4	12.1	12.9	13.6
12	32.4	27.7	33.0	27.4	22.4	21.7	26.2	22.3	22.1	23.2	26.6	18.6
13	40.4	36.6	28.8	37.3	35.3	34.7	35.1	33.5	40.6	33.7	29.9	47.5
United States navy yards [3]	15.2	13.2	11.2	12.4	11.9	13.4	13.2	13.5	13.4	15.2	14.8	14.4

[1] Average number of industrial injuries per million man-hours worked. Rates for private shipyards are computed in the Bureau of Labor Statistics and for navy yards, by the Navy Department.
[2] Includes yards located on the eastern coast of Florida.
[3] Government owned and operated.

Labor Disputes in Private Shipyards, 1943 and 1944 [18]

In view of the large number of workers employed in shipyards, relatively few days of work have been lost because of labor disputes. There were 86 strikes and lockouts in private shipyards in 1943 and 63 during the first 6 months of 1944 (table 29). The 86 strikes in 1943 accounted for a loss of approximately 206,000 man-days, while the 63 strikes during the first 6 months of 1944 resulted in a loss of

[18] From data supplied by the Industrial Relations Division of the U. S. Bureau of Labor Statistics.

nearly 127,000 man-days. The total of strike idleness in the 18-month period was less than 0.06 percent of the available working time.

The greatest number of workers involved in a single stoppage in 1943 was approximately 17,000 at the Cramp Shipbuilding Co. in Philadelphia, over the discharge of a union representative. The greatest number of man-days lost in a single stoppage was about 25,500 at the Alabama Dry Dock Shipbuilding Co. (Mobile, Ala.) because of a racial dispute. Within the first 6 months of 1944, nearly 14,000 were out on strike at the Cramp Shipbuilding Co., with a loss of over 40,000 man-days of labor on account of the discharge of a group of spray painters. The dispute was later submitted to arbitration.

TABLE 29.—*Strikes and Lockouts in Private Shipyards, 1943 and January–June 1944*

Region	1943		January–June 1944 [1]	
	Strikes and lockouts	Man-days idle	Strikes and lockouts	Man-days idle
All regions	86	205,861	63	126,940
North Atlantic	37	96,479	25	64,142
South Atlantic	1	230	3	4,444
Gulf	23	77,212	15	34,471
Pacific	11	10,522	4	5,914
Great Lakes	11	21,187	9	16,468
Inland	3	231	7	1,501

[1] Preliminary and subject to change.

Union Agreements

Not only was shipbuilding among the first of American industries,[19] but it also was among those in which American workers organized early in the nineteenth century to improve working conditions.[20] The first recorded strike among shipbuilders took place in 1817 at Medford, Mass., in protest against the employer's determination to abolish the "grog privilege" customary at that time (drinks being furnished to workmen at different intervals during the day). In 1832, Boston shipwrights and caulkers asked overtime pay for all hours worked over 10 per day, taking part in the more general strike of building-trades workers for this limitation. Although the Boston shipyard workers were defeated through a lockout, the system advocated was adopted later in the ports of New York and Philadelphia after a struggle by the workers there. The movement for the 10-hour day won public support which culminated in a proclamation by President Van Buren establishing a 10-hour day for all workers employed in United States navy yards.[21]

At the beginning of the First World War, the International Brotherhood of Boilermakers, Iron Shipbuilders and Helpers of America and other metal-trades unions (A. F. of L.) were well established in a number of yards. As the shipbuilding program expanded the union gained strength, and became especially strong on the west coast.

[19] Weeden, William B.: Economic and Social History of New England, 1620–1789, vol. I, p. 167.
[20] McNeill, George E., editor: The Labor Movement, 1887, p. 333.
[21] Ibid., p. 94.

After the close of the war, with the resultant decrease in employment, union strength faded. Following several disastrous strikes, open-shop conditions prevailed in most yards.

The Industrial Union of Marine & Shipbuilding Workers of America was organized in 1933 after the revival of the shipbuilding industry in 1932. After two strikes the union became firmly intrenched at the New York Shipbuilding Co., Camden, N. J. In 1936, after organizing other Atlantic coast yards it joined the C. I. O. Thereafter it became the dominant east coast union. The A. F. of L., which had maintained its organization on the west coast, made rapid strides there though the C. I. O. organized three of the major yards in the Los Angeles area. In the Great Lakes and Gulf coast areas the A. F. of L. dominates the field.

In 1940 it was estimated that 50 percent of the yards and 55 percent of the shipyard workers were operating under union agreements. Most of this strength was concentrated along the Atlantic coast. The percentage of all shipyard workers covered by union agreements rose to 75 percent by 1942 and to over 92 percent by January 1944; practically all of the wage earners in private shipyards were working under some kind of union agreement.

The majority of shipyard workers are covered by three types of union status—closed shop, union shop, and membership maintenance.[22] In January 1944 about half of the employees under collective-bargaining agreements were covered by closed-shop provisions, and most of the remaining were under union-shop and membership-maintenance agreements.

Although bilateral written agreements are not made with shipyards operated by the Federal Government, workers in the navy yards are permitted to join unions and representatives of these unions negotiate with appropriate Government officials regarding wage rates and other matters pertaining to working conditions.

Nearly two-thirds of the workers in private shipyards under collective bargaining arrangements in October 1944 were covered by agreements signed by the A. F. of L. Metal Trades Council—chiefly the International Brotherhood of Boilermakers, Iron Shipbuilders and Helpers of America. Almost a third were with the C. I. O. Industrial Union of Marine and Shipbuilding Workers of America; and about 5 percent were working under agreements signed by independent unions, most of which are affiliated with the East Coast Alliance of Independent Shipyard Unions of America.[23]

[22] Under closed-shop agreements all employees must be members of the union at the time of hiring and must continue to be members in good standing throughout their period of employment. Under union-shop agreements, employers may hire any applicant, but the workers must become union members as a condition of continued employment. Maintenance-of-membership agreements contain clauses which provide that all employees who remain members after a specified period, or who later voluntarily join the union, must retain their membership for the duration of the agreeement as a condition of continued employment.

[23] From data supplied by the Industrial Relations Division of the U. S. Bureau of Labor Statistics.

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UNITED STATES DEPARTMENT OF LABOR
L. B. Schwellenbach, *Secretary*
BUREAU OF LABOR STATISTICS
A. F. Hinrichs, *Acting Commissioner*

WILMINGTON SHIPBUILDERS DURING AND AFTER WORLD WAR II

From the MONTHLY LABOR REVIEW
of the Bureau of Labor Statistics
United States Department of Labor
JUNE 1946 *issue, with additional data*

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Wilmington Shipbuilders During and After World War II[1]

THE general improvement in nonagricultural employment since October 1945, following the decline which commenced after the end of the European phase of the war, has by-passed local pockets of persistent and fairly heavy unemployment. Areas in which there was a heavy concentration of war production are typical of such localities. One such instance was Wilmington, Del., and its wartime shipyard workers during the winter of 1945–46.

The Shipyard

The Wilmington shipyard, from which 166 workers were selected by the Bureau of Labor Statistics for intensive study as representative of the 4,700 employed by the yard in April 1945, produced destroyer escorts during the early war years; production later was shifted to "landing ships medium." In addition, the shipyard also produced dredges for the Army Engineers.

Employment in January 1941 was only 250. By September 1943, it had increased nearly forty-fold to more than 9,600, with the majority of the total hired after June 1942. This was the peak of employment. From October 1943 on, the decline was fairly continuous, and by the beginning of 1946 employment had dropped to approximately 200 workers.

It is against this backdrop of intensive production and employment activity—and subsequent sudden cessation of production and curtailment of employment—that the Bureau, through its study, attempted to portray the occupational and economic antecedents of the workers of the shipyard, their mobility, their geographic dispersion, something of their social characteristics, and, perhaps most important, the general effect on them of rapid disemployment in terms of income and occupational readjustment.

Labor Supply

Wilmington's industries have usually been able to draw workers from the nearby agricultural districts of Delaware and eastern Maryland. During World War II, apart from the labor shortage induced by the expansion of other industries in the immediate area, the shipyard faced active competition for labor from the large industrial centers of Philadelphia and Baltimore, and from the New Jersey County of Salem, directly across the Delaware River. Although the supply of workers was less short than in Baltimore, classified as a Group I war manpower area, Wilmington remained in Group II for most of the war period.[2]

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[1] Prepared by Hilda W. Callaway of the Bureau's Wage Analysis Branch. The field work for the study was conducted by the Bureau's regional office in Philadelphia.

[2] Wilmington was classified as Group I only between May and September 1943. Group I included "areas in which acute labor shortages exist or are anticipated, that will endanger essential production"; Group II included "areas in which labor shortages exist that are approaching a balanced demand-supply situation." (Source War Manpower Commission.)

Unable to obtain enough workers from the population of the city or neighboring areas, the shipyard's representatives traveled great distances on a recruitment drive. One shipyard worker, for example, said he learned of the Wilmington job from a company representative while employed as a truck driver in Marshfield, Wis. The United States Employment Service, in particular, and the Industrial Union of Marine and Shipbuilding Workers of America were also instrumental in bringing workers to the shipyard. Some of the workers heard of job openings while enrolled in vocational schools located in other States; others were attracted by reports of friends and relatives within the city.

The Shipyard Work Force

The 166 representative shipyard workers differed in many characteristics from the prewar labor force, which had built ships on a custom basis.

Before the war, men predominated in the shipyards, primarily because of the heavy nature of the work. The inflated war demands for labor, coupled with the steady drain of men into the armed forces, resulted in a drastic revision of hiring standards. Women and older men, as well as young men 16 and 17 years of age, many without training and without previous industrial experience, were taken on.

Early in 1942, the Wilmington shipyard began the recruitment of women. In the group studied in April 1945 there were about one-fifth as many women as men, a sharp contrast with the situation in March 1942 when only a half of 1 percent of private-shipyard wage earners were women.[3]

Men ranged in age from 17 to 68 years; more than two-fifths were under 35 and about one-half as many (22 percent) were over 45. The women were much younger; only 1 (a former buyer for a Wilmington retail store) was over 45 years of age, while 20 were under 35.

EDUCATION AND TRAINING

All but 11 of the 166 workers had received at least 4 years of schooling; 1 Negro and 3 white men had never attended school. Women had acquired more high-school education than men; almost three-fifths as compared with about one-half. On the other hand, none of the women but 5 of the men, including 1 Negro, had taken some college work.

While a high-school or college education is not required for many types of employment, either provides an advantage for the job seeker in some pursuits. Perhaps of greater assistance in shipbuilding is the acquisition of specialized training and skills. Although this industry changed from custom-made to mass-production methods during the war, a high proportion of skilled labor was still required. However, only 35 of the 166 workers studied had any trade school or vocational training before entering the yard; yet 84 men and 4 women were holding skilled jobs and another 32 men and 10 women were employed in semiskilled occupations when surveyed in April 1945.[4] Fifteen men and 2 women had taken their training after January 1941 and

[3] See Wartime Employment Production and Conditions of Work in Shipyards, U. S. Bureau of Labor Statistics, Bulletin No. 824 (p. 6), 1945.

[4] Training of the 35 workers covered a period of 1 month or more.

the others, 21 men and 1 woman, prior to this date. A few received training in both periods.

Before the war some workers had acquired skills which were in no way related to their shipyard jobs, such as a former commercial artist who became a pipe welder, first class, at the shipyard. There were, however, more workers whose prewar training was useful in the shipyard. To illustrate: A 57-year old man who in 1907 had completed a 3-year apprenticeship in sheet-metal work and had worked continuously at the trade, started in the shipyard in December 1942 as a first-class sheet-metal worker. In a few months he was promoted to foreman in the sheet-metal department and was still serving in that capacity in the spring of 1945.

The majority of the workers with no training before the war had taken courses in the company-operated school, under the Government vocational training program, or in private schools. The cost of training undertaken in private schools was frequently high, as much as $135 for some workers. Because the starting rate of pay was uniform for all workers employed in the same capacity, irrespective of source or types of training undertaken, the workers who had spent their own funds felt that their investment was wasted.

An important question arises in connection with the training and skills acquired during the war: Will these skills aid workers in finding jobs in a selective and competitive labor market? Obviously, a definitive answer is not possible. It must be recognized that not only shipyard workers but millions of others who were engaged in war production acquired skills previously foreign to them. In addition, millions of men received training of various kinds while with the armed forces. From a competitive viewpoint, one out of a hundred men who can read blueprints may be in no better position than one out of a hundred common laborers. Perhaps the greatest and most important gain that may be realized from the broader acquisition of skills is that which follows from the general improvement in the efficiency and productivity of American labor.

UNIONIZATION

The Industrial Union of Marine and Shipbuilding Workers of America, a CIO affiliate, had a closed shop agreement with the shipyard which included all the yard's wage earners with the exception of supervisory personnel, working foremen, and subforemen. None of the women included in the sample had been union members before their shipyard employment. This is not surprising since most of them had been housewives or domestics. On the other hand, 51 of the 135 men had held union cards previously; 10 of them, former miners, had been affiliated with a union for periods varying from 6 to 15 years.

Migration

Shipbuilding and other essential industries would have been severely handicapped had not workers been willing and able to move to the war production centers; in very few instances was the local labor supply adequate to meet manpower requirements.

Between January 1941 and April 1945, two-fifths (69) of the shipyard workers surveyed had made an aggregate of 78 moves from one city

to another to obtain work. For a few workers, the moving cost was nominal; they came in their own cars and brought fellow workmen who shared transportation expenses. Others came by bus and railroad coach, which explains to a large extent why the cost of moving for 44 of the migrants [5] was less than $50, even though the distances some of them traveled was great. Thus, a farmer from Georgia brought his wife and daughter with him by train at a cost of about $30. Expenditures for 7 of the moves ranged from $100 to $200 and a like number cost $200 to $300. Only one worker, who came from New Hampshire and brought his family of 4, spent as much as $300.

The shipbuilders who came to Wilmington from other industrial centers probably had less difficulty in adjusting themselves to an urban community than the farmers and farm laborers, coal miners, filling-station attendants, domestic servants, and textile workers from the rural areas and small towns. In January 1941, 74 of the 166 workers were scattered over 18 different States, not including Delaware. Forty-two of the migrant workers came from either rural communities or small towns, whereas only 12 were from cities of more than 250,000 inhabitants. Less than a fourth of the 166 workers, exclusive of the Wilmington residents, lived within a hundred mile radius of the city in January 1941; 8 were living more than 500 miles away, and 33 were 100 to 500 miles distant.

Prewar Employment of the Shipbuilders

With the channeling of manpower and materials to military purposes there began a tremendous shifting of workers to war industries, and from one war industry to another, as military requirements changed. In January 1941, all but 12 men and 15 women of the 166 studied were employed. Five men were still in school and 3 were unemployed and seeking work. Twelve women were housewives, 11 of whom had never been gainfully employed until the war encouraged them to offer their services.

About a fourth of the workers were usually employed in manufacturing, chiefly in the textile mills of Wilmington and the Carolinas, in the manufacture of transportation equipment, and in the local leather industries. Construction supplied the next largest group, 25, while 24 came from the service trades, and 15 from farms in Delaware or elsewhere. Wholesale and retail trade supplied 13 workers; a like number came from transportation, communication, and public utilities; 10 came from the coal fields, principally of West Virginia and Pennsylvania. Five workers were usually employed by Federal, State, or local government, and the remaining 3 by finance, insurance, and real estate companies.

Closely interwoven with the industrial shifts were changes in the workers' occupations. In April 1945, 88 workers were employed in skilled and 42 in semiskilled jobs. Of the remaining 36 workers, 15 held unskilled jobs, 9 were service workers, and the other 12 held various clerical jobs, such as timekeeper, material checker, etc. Though a predominance of skilled workers is characteristic of the industry's labor force, many of the shipbuilders had not previously

[5] For purposes of this study, a person was considered a migrant if he moved from one city to another to take or seek work. Moves unrelated to employment were not counted.

been craftsmen. For example, of the 15 former farmers and farm laborers, 8 held skilled and 6 semiskilled jobs. The farm laborers may have had an advantage over some of the other workers because they frequently acquire mechanical skill in repairing and handling farm implements.

As might be expected, in view of the short supply of required skilled labor, upgrading of workers to skilled and semiskilled jobs became a necessity. However, it is noteworthy that out of 47 workers who had held skilled jobs before 1941, 5 became semiskilled workmen, 3 became clerical workers, and 1 held a custodial job at the shipyard. By contrast, only 11 of the 36 workers usually engaged in semiskilled work remained in the same category; 20 were upgraded to skilled jobs, 4 became service workers, and 1 a clerical worker.

Irrespective of age, sex, or color, all but 8 of the workers (7 of whom had entered the labor market late in the war) had changed jobs at least once since January 1941. Almost two-fifths of the 166 workers had held 4 or 5 jobs; 27 percent, 6 to 9 jobs; and the same proportion, 2 or 3 jobs.

The Shipbuilders' Wartime Earnings and Hours

Shipyard workers are among the highest paid in manufacturing industries. Gross weekly earnings of the 166 shipbuilders averaged $63.16 in April 1945, about $14 above the national average for all manufacturing workers. After deductions for income tax, social security, and union dues, net "take home" pay was $55.19, exclusive of war bond purchases. In terms of 1941 purchasing power this amounts to $42 a week.

Although job rates were the same for men and women, very few of the latter obtained the higher paying jobs; no woman received over $70 per week. On the other hand, 28 men earned more than this amount and 4, who were foremen, grossed more than $100.

The comparatively high weekly earnings of the shipbuilding workers in April 1945 were to a large extent due to shift bonuses (3 shifts were in operation) and to overtime pay. Among the 166 workers, 146 were working 48 hours, 17 worked over 52 hours, 2 were on a 40-hour schedule, and 1 worked 49 to 51 hours.

Many of the workers had left industries in which wage rates historically have been lower than in the durable-goods industries. Only 18 workers, 13 of whom were women, had hourly earnings of 90 cents or less in April 1945. While 1 out of every 6 women earned at least $1.20 an hour, more than two-thirds of the men earned that much or more. For most of the workers, shipyard work meant a substantial increase in hourly rates over 1941.

Despite the high level of weekly earnings in April 1945, it is unlikely that many shipyard workers received an annual wage income in 1945 equal to that of 1944, owing to the cut in the workweek and lower wage levels for peacetime employment. In 1944 there was a greater concentration of women than men at the lower income levels: only 2 of the women had an annual wage income of $3,000 or more, as compared to 57 (two-thirds) of the men; 22 of the latter had incomes above $4,000. This is partially accounted for by the late entrance of women into the shipyard and the fact that some of them worked

less than 12 months in 1943. To a greater extent, the difference was due to the smaller proportion of women in skilled jobs. The following table also shows a marked increase in the incomes of both men and women between 1943 and 1944, primarily the result of occupational changes.

Classified Annual Wage Income of 160 Identical Shipyard Workers, 1943–44, by Sex[1]

Income class	1943		1944	
	Men	Women	Men	Women
All income classes	132	28	132	28
Under $500		1		
$500 and under $1,000	2	5		1
$1,000 and under $1,500	5	5		2
$1,500 and under $2,000	15	10	5	6
$2,000 and under $2,500	20	5	11	9
$2,500 and under $3,000	33	2	29	8
$3,000 and under $3,500	26		40	2
$3,500 and under $4,000	15		25	
$4,000 and under $4,500	6		10	
$4,500 and under $5,000	6		4	
$5,000 and over	4		8	

[1] Excluding 3 men and 3 women who had no wage income in 1943. None of them earned more than $2,500 in 1944.

Effects of the Cut-Back

Not all job seekers found work in the Wilmington area after wartime operations ceased. When wartime employment at the shipyard was at its highest point, in September 1943, only 387 persons in Wilmington were receiving unemployment compensation. Two years later, following VJ-day, the number had grown to 9,300; in January 1946, unemployment benefits were being paid to 18,600 persons.

Shipbuilding contributed heavily to the pool of unemployment. In the yard surveyed, the rolls had been cut from 4,700 to almost 200 workers between April 1945 and January 1946. Of the 166 workers interviewed, only 5 still held their shipyard jobs in the winter of 1945–46;[6] over a fourth were unemployed and seeking work. As the figures below show, most of the workers had been jobless for 1 to 3 months. Not all of them had received unemployment compensation: some were ineligible because of illness;[7] others were reluctant to apply because they considered the benefits as relief; some were disqualified for quitting their jobs; still others did not know of the program or where and how to file a claim.

	Number of unemployed workers
All periods of unemployment	42
Less than 1 month	5
1 and less than 2 months	10
2 and less than 3 months	14
3 and less than 4 months	4
4 and less than 5 months	4
5 and less than 6 months	--
6 and less than 7 months	2
7 and less than 8 months	3

[6] Ten workers known to have lost their jobs could not be traced during the resurvey and another had died.
[7] It is of interest to note that Rhode Island is the only State paying cash benefits during illness. These benefits are financed by a 1-percent contribution out of workers' wages.

The high rate of unemployment among the former shipbuilders reflects the immediate effects of the disappearance of war work in Wilmington; of the 42 unemployed, 33 were still living within the city or neighboring suburbs. Some of the unemployed had no intention of leaving but hoped eventually to find jobs in the same area. This hope was fostered by the construction of an automobile assembly plant, started in the winter of 1945. Lack of information as to what was available or of means to move and uncertainty about ability to find housing accommodations elsewhere also kept workers from migrating. Some of the unemployed had turned down jobs because they considered the wages offered too low. In particular, skilled and semiskilled jobs in textile and leather manufacturing plants were refused on the grounds that wages were inadequate; in some cases, they were less than half the shipyard hourly wage.

Women, older men, and workers of both sexes with limited work experience found it especially difficult to obtain suitable work. Thus, more than one-half of the women studied, in contrast to one-fifth of the men, were unemployed. About a fourth of the men 45 years of age or older were seeking work as compared with a fifth in lower age brackets. Several of the workers had turned down jobs offered by the U. S. Employment Service in the hope of finding something at their usual skill level. These refusals did not always mean disqualification for unemployment compensation; war and prewar training frequently justified the demands for particular types of work. For example, a skilled leather worker who became a power shear machine operator at the shipyard at $1.12 an hour, refused a job as laborer at 60 cents an hour in a local tanning plant.

Some workers had no jobs offered them by the USES. To cite one case, a 27-year-old woman—a shipyard laborer who baled paper and rags—had not been offered a job since she was laid off in June.

Nearly half the workers, 77 in number, had found other jobs by January 1946, generally through the aid of the USES or their union. Several seem to have realized their postwar plans and to have made a satisfactory adjustment to peacetime employment. Three prewar farmers wanted to return to agriculture and are now reestablished on farms. Some construction and factory workers have resumed their prewar trades or jobs. Others whose plans, when first interviewed, involved ventures into new fields have made only temporary adjustments and expect to find other employment within the next 12 months.

Ten workers, three of whom were self-employed before entering war industry, were operating their own businesses in January 1946. However, two of them, an upholsterer and a filling-station operator, were having financial difficulties and expected to return to the wage-earner group. Withdrawals from the labor market, 21 in all, were greater than was expected in April 1945: 9 men were inducted into the armed services, 1 young man entered college, and 5 women became housewives. The other 6 were men forced out of the labor market by illness.

INDUSTRIAL AND OCCUPATIONAL SHIFTS

While only 5 of the 155 were still shipbuilders in January 1946, the distribution of workers, occupationally and industrially, had not by then returned to the prewar pattern. Manufacturing and construction accounted for relatively more of the employed workers in the winter of 1945–46 than in January 1941. On the other hand, agriculture, mining, and services showed losses. However, compared to 1941, a relatively large number were unemployed or had left the labor market, and the changes indicated may reflect an unstable situation.[8]

Using identical workers, thereby excluding both wartime entrants into the labor market and the unemployed, the proportion of workers in manufacturing increased from 31 to 39 percent.

	Employment of 88 identical workers			
	Usual—Prewar		*Winter 1945–46*	
	Number	*Percent*	*Number*	*Percent*
All industries	88	100	88	100
Agriculture	11	13	3	3
Mining	5	6	2	2
Construction	14	16	18	21
Manufacturing	27	31	34	39
Wholesale and retail trade	7	8	8	9
Finance	3	3	3	3
Transportation	8	9	10	11
Services	11	12	6	7
Government	2	2	4	5

Although every fourth displaced shipbuilder found a job in construction work, more than half of them had been in other industries prior to the war. Among those who had found manufacturing jobs in January 1946 were 5 prewar farmers, a miner, 4 construction workers, an insurance salesman, and 2 service workers. More than a third of the workers whose usual prewar employment was in factories went into other fields, chiefly construction, although there were instances where an industrial worker took a service or government job.

For the same reasons that the full extent of industrial shifts are not yet apparent, postwar occupational changes are still incomplete. Two-fifths of the skilled workers and a seventh of the semiskilled (based on prewar experience) were among those seeking work. Less than one-half of the 88 employed workers who had prewar experience were working at their usual occupation or in their prewar jobs. Apparently, in making postwar adjustments, workers were strongly influenced by their wartime jobs; thus, there was a continued concentration of workers in craftsmen occupations.

POSTWAR WAGES AND HOURS

Between April 1945 and January 1946, average gross weekly earnings had declined 32 percent, according to reports from 81 identical shipbuilders whose average pay had been $63.53 in the prior period. Earnings of women, both white and Negro, had fallen 50 percent. A 29 percent decrease was found for white men, as compared to 37 per-

[8] In January 1946, 9 were in the armed forces and 12 were not seeking work. In January 1941, the corresponding figures were 1 and 11.

cent for Negro men. The greater decline for women reflects a shorter workweek (48 hours in April 1945 and about 41 hours in January 1946); the workweek for men was only 1 hour below the April average. While in most cases the shift to peacetime employment meant a sharp wage cut, the wages of workers now employed in construction on a 40-hour schedule exceed those of shipyard workers based on a 48-hour week.

Reports from 66 workers [9] revealed that the average ex-shipbuilder grossed only $44.32 per week in the winter of 1945–46. Five years earlier his average weekly earnings were $35.36. In 1941 the sole deduction, 35 cents, was paid as social-security taxes; in the winter of 1945–46, about $2 more was deducted for income taxes. In view of the increased cost of living essentials, spendable income amounted to less than $33 in 1941 purchasing power. Many of these workers had accumulated savings and war bonds, but in large part they had been expended because of unemployment or the reduced weekly pay and, to some extent, by migration costs.

MIGRATION

In all, 37 workers or slightly more than half of the number who came to Wilmington to work in shipyards left the congested Wilmington area after April 1945. All but 10 returned to their 1941 residences. Some moved the day following receipt of their last pay; others stayed a few weeks searching for work. A few found jobs in other plants which were winding up war contracts, or in peacetime industries, before they made the decision to return home.

No community labor market which experienced as rapid an expansion of war industries as did Wilmington is likely to absorb all its displaced workers. While some will move on to other communities in search of work, or will return to former residences, others will remain. The United States Employment Service, which was instrumental in bringing many of the workers to the war areas, is now redirecting workers to new jobs. The rapidity and efficiency with which this can be done are circumscribed by the fact that the USES does not have funds to transport stranded workers to former homes or to new jobs.

The Wilmington shipyard workers' experiences are not unique. War production utilized millions of workers, the vast majority of whom faced the question: "Where can a job be found?" Added to their group are the veterans and new entrants into the labor market. The absorption of workers into the peacetime labor force will be influenced by the amount of training or retraining of workers whose present skills are not marketable, relocation of workers to areas where there is an active labor demand, and guidance of workers to jobs which are suitable both in terms of skill and wages.

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[9] In order to make comparisons with 1941, only those workers for whom information was available for both dates could be used.

Appendix A.—Sampling Method and Procedure of Study

The sample of 166 Wilmington shipbuilders is believed to be a representative cross section of the shipyard labor force as of April 1945. More than 30 occupational classifications including the major types of shipyard work at various skill levels were covered. Names of the workers studied were randomly selected from an April 1945 pay roll of the 4,700 wage earners then employed at the yard; the list was then examined to assure that major characteristics, such as sex, color, and occupation, had been adequately taken into account.

Field representatives of the Bureau's regional office in Philadelphia interviewed the workers at their homes during April 1945. Prior to the interviewer's call, a letter outlining the purpose of the study and requesting cooperation had been sent to each of the workers. In a few instances where a worker had moved out of the area, he was replaced by an alternate. The schedule form [1] used during the initial survey was designed to obtain a record since January 1941 of the worker's earnings and employment experiences, his migrations to seek or obtain work, and his future employment plans. Additional data on education, training and skills, and family responsibilities were collected for use in interpreting the information on workers' wartime economic status.

During December 1945 and January 1946 the workers were interviewed again. The major objective was to ascertain what problems had arisen as a result of changing jobs and readjusting to a peacetime economy.

At the time of each interview, a franked postcard was given the worker to notify the Bureau of change in address. Some workers moved and left no forwarding address and failed to send in address changes. Through calls to former neighbors of the workers and neighborhood storekeepers, and from other sources, it was possible to trace all but 10 workers in the winter of 1945–46.

Periodically the ex-shipyard workers will be resurveyed by mail or by interview in order to observe further developments in their readjustment to peacetime jobs.

[1] Copies of the schedule form and related instructions are available upon request.

Appendix B.—Case Histories

Shipyard Woman Mechanic Becomes One of California's Unemployed

Shortly after being laid off in September 1945, E. D., a former second-class mechanic at the shipyard, moved with her 18-year-old daughter to California in search of work. Neither of them had a promise of a job; they moved because most of their relatives lived on the west coast.

In January 1946, E. D.'s only income (unemployment compensation) was $18 per week. She was looking for a job as stock clerk, or as elevator operator which had been her first full-time work in the early 1930's. The daughter, working in a drug store for $27.50 weekly, earned $11 more than when employed as a clerk in a Wilmington newspaper office.

In the face of reduced income, expenses rose. Rent for five rooms exclusive of heat had been $18 a month in Wilmington, but in California they paid $40 for one furnished room. The trip west had cost $150, which probably explains why E. D. cashed her $200 worth of war bonds.

Like many others, E. D. preferred to remain a shipbuilder. At the yard, as a trainee in the electrical outfitting department, she was paid an hourly rate of 60 cents and while on the job learned to read blueprints. By November 1944 she had been upgraded to mechanic, second class—the job she held until the September 1945 lay-off. Between January 1942 and November 1944 her gross weekly pay had more than doubled—from $27.50 to $58.24; the latter were her earnings until September 1945. From 1936 to 1942, E. D. had been a WPA forewoman, supervisor, and timekeeper on emergency work. When the project folded, she found employment as storekeeper in a plant fabricating iron and steel. Within 3 months she was laid off but almost immediately found an opening at the shipyard.

Wage Income Cut In Half By Return To Former Job

C. J. was laid off in July 1945 but the following day returned to work as an oiler for his former employer who operated excursion boats. On his new job he grossed $31.20—half as much as he had earned at the shipyard for the same workweek of 48 hours. At the time of the interview he stated that he would rather accept low wages than unemployment compensation.

He and his wife pay a monthly rental of $27.50 for a three-room unfurnished apartment. In order to meet expenses, he had had to exhaust his war bond savings of $150 and all but $10 of his $150 in bank savings. In the winter of 1946 he was $80 in debt.

This ex-shipfitter hopes to find better paying work in Wilmington. However, he may have difficulty in obtaining a job at a higher rate of pay, since he has no trade or specialized skills. Before the war he

was a short-order cook in a chain restaurant for almost 12 years. As late as 1941 he was earning about $25 for 60 hours of work. At the shipyard he learned to read blueprints and was upgraded from laborer in July 1942 to shipfitter, first class, by April 1943. However, many other shipyard workers acquired the same training at the company-operated school.

Longer Hours, Lower Pay Rate, but Better Living Conditions Reported by Shipyard Machinist Who Returned to Coal Fields

In December 1945, J. D., who was laid off in April 1945, was again working in the Pennsylvania bituminous coal mine operated by a large steel company, in which he had worked for 18 years before entering the shipyard. He had left the coal fields in July 1943 to take advantage of the high wages being offered in war industries. In April 1945, his gross weekly pay at the shipyard was $62.40 for 48 hours' work, in contrast to $37.50 for 35 hours' work as a coal loader. In December 1945, his gross weekly earnings as a timberman based on a 58-hour week, plus a 6-cent differential for night work, amounted to $79.09. However, his hourly rate in coal mining ($1) was lower than in the shipyard in April 1945 ($1.12).

J. D. had hoped to maintain his shipyard employment and remain in Wilmington, but these plans had to be changed when he lost his job in April 1945. Almost immediately he obtained another shipyard job in Camden, N. J., but it lasted only a month. Through the USES he took a job as a dryer operator in a chemical plant in Salem County, N. J., where he earned 86 cents per hour, 26 cents less than in the shipyard in April 1945. After 2 months he quit because he "couldn't stand working around chemicals," and returned to the coal town near the West Virginia border.

Although through war work J. D. increased his earnings, he was apparently unable to improve his living conditions. In December at his home in the coal town he stated, "living conditions here are much more satisfactory than in Wilmington. There the house was cold and damp, had cement floors. The children have been much healthier. Rent is cheaper."

In Wilmington, with his wife and two young children, J. D. had occupied a four-room apartment in one of the war housing developments, which rented for $40. Back in the coal camp, their monthly rent for a four-room house equipped with electricity and plumbing facilities was only $12.

Older Worker Unemployed 2 Months—No Suitable Job Openings

R. M., 52 years of age, was laid off in October 1945 and from then until December 23, 1945, was unemployed. His only income during that period was $72, which he drew as unemployment compensation. He was offered a job as laborer in a local tanning plant, which he refused because the rate—60 cents an hour—was too low. He has purchased a home in the area and for this reason does not want to seek work elsewhere.

When R. M. began work in 1910, as helper in a jobbing machine shop, he had completed 8 years of school. His longest employment,

in a local tanning plant which manufactured leather belts for power transmission, covered a 10-year period—July 1932 to September 1942.

Attracted by higher shipyard wages, he left the tanning plant and became a pipe fitter's helper at $1.10 an hour, 50 cents more than he had earned as a remover of flesh from hides. After a little more than 2 months his shipyard rate was raised to $1.15, but he was soon laid off. He immediately obtained another shipyard job as pipe fitter's helper in a different company. This shift resulted in a substantial cut in pay even though he was still working in the same capacity. At 89 cents per hour—21 cents less than his beginning rate at the first shipyard—his gross weekly earnings declined by approximately $11. Because of his age the rigorous outdoor work became too difficult and, in January 1943, he was transferred to an inside job as shearing-machine operator's helper. Five months later he was upgraded to first-class operator.

In the spring of 1945, he was working 48 hours a week at $1.04 per hour. His postwar job plans were indefinite. He knew he wanted to remain in Wilmington, but like a number of his fellow workmen he was uncertain as to the occupation and industry in which he would seek employment.

Appendix C.—Detailed Tables

1.—Age, Race, and Sex of 166 Shipyard Workers

Age	Total		White		Negro	
	Men	Women	Men	Women	Men	Women
All ages	135	31	117	24	17	7
15 to 19 years	4		4			
20 to 24 years	9	6	7	6	2	
25 to 29 years	13	10	9	7	4	3
30 to 34 years	32	4	28	2	4	2
35 to 39 years	26	5	24	3	2	2
40 to 44 years	21	5	19	5	2	
45 to 49 years	8	1	7	1	1	
50 to 54 years	9		9			
55 to 59 years	9		8		1	
60 to 64 years	3		2		1	
65 years and over	1		1			

2.—Marital Status and Sex of the 166 Shipyard Workers

	Total	*Men*	*Women*
All workers	166	135	31
Single	32	22	10
Married	117	104	13
Other	17	9	8

3.—Schooling of the 166 Shipyard Workers, by Age and Sex

Age and year of schooling completed	Total	Men	Women
All workers	166	135	31
Under 45 years of age [1]	135	105	30
Grade school, 1 to 4 years	5	2	3
Grade school, 5 to 8 years	55	46	9
High school, 1 to 4 years	68	50	18
College, 1 year or more	4	4	
Schooling not reported	1	1	
No schooling	2	2	
45 years of age and over (including age not reported)	31	30	1
Grade school, 1 to 4 years	2	2	
Grade school, 5 to 8 years	18	17	1
High school, 1 to 4 years	7	7	
College, 1 year or more	1	1	
Schooling, not reported	1	1	
No schooling	2	2	

[1] Only 4 workers were under 20 years of age.

4.—*Distribution of the 166 Shipyard Workers, by Family Size, Dependency, and Sex*

Composition of worker's family and number of dependents	Total	Men	Women
Number of workers	166	135	31
Family composition			
1-person families	19	12	7
Worker and spouse only	19	17	2
Other 2-person families	11	6	5
3-person families	35	29	6
4-person families	34	28	6
5-person families	21	19	2
6-person families	15	13	2
7-person families	7	6	1
8-person families	5	5	----
Number of dependents			
Workers with no dependents [1]	35	17	18
Workers with 1 dependent	37	29	8
Workers with 2 dependents	32	28	4
Workers with 3 dependents	22	22	----
Workers with 4 dependents	21	20	1
Workers with 5 dependents	10	10	----
Workers with 6 dependents	7	7	----
Workers with 7 dependents	2	2	----

[1] Includes 1-person families. This group includes economically independent workers who lived alone or boarded with unrelated persons, provided they were not temporarily absent from families of which they were the family heads.

5.—*Employment in the Families of 166 Shipyard Workers, by Race and Sex*

Employment status of workers' families	Total [1]		Men [1]		Women [1]	
	White	Negro	White	Negro	White	Negro
All families	142	24	118	17	24	7
1-person families [2]	18	1	11	1	7	----
Others in family but none employed	76	18	74	14	2	4
1 other person in family employed	37	4	25	2	12	2
2 other persons in family employed	7	----	6	----	1	----
3 or more other persons in family employed	4	1	2	----	2	1

[1] Refers to number of workers included in Bureau's study.
[2] For definition see footnote to table 4.

6.—*Number of Changes of Employer and Jobs Made by 166 Shipyard Workers, January 1941 to April 1945, by Sex*

	Men	*Women*
Number of changes of employer since January 1941 [1]	135	31
No change (still with same employer)	9	10
1 change	66	12
2 changes	40	7
3 changes	19	--
4 or more changes	1	2
Number of job changes since January 1941 [2]	135	31
No change (still on same job)	3	5
1 change	8	4
2 changes	26	10
3 changes	24	4
4 changes	35	2
5 changes	25	2
6 changes	9	1
7 or more changes	5	3

[1] Includes changes from one plant or employer to another.
[2] Includes changes in grade within the same occupation.

7.—*Classified Straight-Time Hourly Earnings and Gross Weekly Earnings of 166 Shipyard Workers, as of April 1945, by Sex*

Earnings	Total	Men	Women
Number of workers	166	135	31
Straight-time hourly earnings			
80 and under 90 cents	18	5	13
90 and under 100 cents	16	11	5
100 and under 110 cents	13	9	4
110 and under 120 cents	22	18	4
120 and under 130 cents	70	67	3
130 and under 140 cents	14	12	2
140 and under 150 cents	3	3	--
150 cents and over	10	10	--
Gross weekly earnings			
Under $40	--	--	--
$40 and under $45	17	5	12
$45 and under $50	7	3	4
$50 and under $55	21	15	6
$55 and under $60	16	12	4
$60 and under $65	51	48	3
$65 and under $70	26	24	2
$70 and under $75	5	5	--
$75 and under $80	3	3	--
$80 and under $85	6	6	--
$85 and under $90	4	4	--
$90 and under $95	5	5	--
$95 and under $100	1	1	--
$100 and over	4	4	--

8.—*Estimated Cost of Moves Reported by 69 Migrant Shipbuilders*

	Number of moves
Estimated cost of moves reported by workers:	
Under $25	32
$25 and under $50	12
$50 and under $75	11
$75 and under $100	--
$100 and under $200	7
$200 and under $300	7
$300 and under $400	1
Cost not reported	8
Total moves reported	78

	Number of workers
Number of workers not moving from one city to another, January 1941–Spring 1945	97
Number of workers moving	69
Total	166

9.—*Employment Status of 155 Shipyard Workers, as of January 1946, by Sex*

Employment status	Total		Men		Women	
	Number of workers	Percent	Number of workers	Percent	Number of workers	Percent
All workers	155	100	127	100	28	100
Employed	92	59	84	66	8	29
Same company	5	3	5	4	--	--
Different company	77	50	69	54	8	29
Self	10	6	10	8	--	--
Unemployed and seeking work	42	27	27	21	15	53
Not seeking work	21	14	16	13	5	18
Student	1	1	1	1	--	--
Housewife	5	3	--	--	5	18
Military service	9	6	9	7	--	--
Other	6	4	6	5	--	--

U. S. GOVERNMENT PRINTING OFFICE: 1946

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Files

February 23, 1945

Mrs. Elinore M. Herrick
Todd Shipyards Corporation
1 Broadway
New York, New York

Dear Mrs. Herrick:

Some time ago, when women were first coming into your yards, you gave Miss Anderson a memorandum relating to the problems involved in employing them. Among them you discussed clothing requirements. This memorandum, however, did not cover outdoor work jackets, except welders' jackets.

I am on the Committee of the American Standards Association considering standards for outdoor work jackets for women. We want to find out the kinds of jackets women need, the extent to which they can get them, and the satisfactoriness of the available jackets.

Can you give me any information about the requirements among your outdoor workers? What kinds of jackets do they wear and what is their approximate cost? Are they satisfactory from the point of view of safety and of serviceability? Do you think it would be of help to establish standards which can be used by the War Production Board in allocating materials for the manufacture of women's work jackets?

Thank you very much for any comments you can send me.

With best wishes,

Sincerely yours,

Jennie Mohr,
Associate Industrial Economist

JM/ml

OCCUPATIONS -Teachers

Magazine Division
Office of War Information
Social Security Building
Washington, D. C.

WOMEN TEACHERS

Today's teacher is as much a part of the total war program as is the woman worker on the production line or the woman in military service. That fact should be made clear both to the girl graduate choosing a profession and to the retired teacher who might be brought back into the schoolroom.

In connection with the wartime information program being conducted jointly by the Office of War Information and the War Manpower Commission on the theme of Women in Necessary Civilian Services for Labor Day 1943, the following brief summary of the teacher shortage has been prepared:

It is estimated that in addition to the normal teacher turnover, 65,000 men and women left teaching during the school year 1942-43 for causes definitely related to the war emergency, 39,000 to enter the armed forces, and 26,000 to take jobs in war industry and other private employment.

Replacements were gained in part by issuing 37,000 emergency teaching certificates to persons not fully meeting regular teaching requirements, and by rehiring teachers who had retired or been forced to leave teaching when they married. Some of the gaps were closed by the more drastic means of closing down schools, increasing the number of pupils to a teacher, and curtailing school programs.

In spite of these measures, however, the states have reported a shortage of 13,000 teachers in elementary and secondary schools during 1942-43. If present trends continue, the situation promises to be even more critical in 1943-44. Current estimates are that additional replacements will have to be found for about 75,000 teachers, most of whom will have to be women. The teacher shortage is not confined to any one section of the country, although it is most acute in those areas where salaries are lowest, and in war production centers.

Most urgently needed are high school teachers of subjects in war-related fields:

Chemistry	Industrial Arts
Physics	Agriculture
Physical Education	Home Economics
Mathematics	Pre-flight Aviation

Teachers of these subjects are rendering an important service to the war emergency, for they are preparing boys and girls for military service and for jobs in war industry.

The demand cannot possibly be filled with students now in teachers' training schools. It is expected that the following adjustments will have to be made:

1. Former teachers who have retired for age or disability must be induced to return to the profession. Although many of these could not take on full-time positions, they can give valuable part-time service.

2. Married women who were forced to retire from teaching by school board rules must be re-employed. Many of those who hold regular teaching certificates will, however, have to take refresher courses.

3. Emergency teaching certificates will be issued to women with experience in fields related to teaching, or women with outstanding technical experience, who must be given special training in teaching methods.

4. Emergency teaching certificates will be issued to many who can qualify in some way. Standards have been considerably lowered, and vary from the requirement of less than a high school education, to college graduates without specific teachers training.

Colleges all over the country are giving summer, evening and Saturday courses in addition to their regular courses, for refresher and quick training purposes.

The following items illustrate the seriousness of the situation:

Gayle S. Eads, supervisor of teacher placement in the Indiana U.S.E.S. urges that "Every available person who holds, or who can qualify for a license, should make application for a teaching position." This year the immediate needs of the schools were met largely by obtaining replacements from the ranks of older teachers who had retired and by persuading married women who formerly were teachers to return to active service. "These sources of supply have been pretty well exhausted," Mr. Eads said, "and if the drain is as heavy during the next few months as it was in 1942, the situation for next fall will be critical." (Indianapolis News, Feb. 4, 194

The Iowa State Department of Public Instruction estimates that there are now 40% less men and women than are required to fill existing vacancies. (Clinton, Iowa, Herald, April 23, 1943)

Harry V. Gilson, Maine Commissioner of Education, warns that secondary education in Maine is threatened with something like a break-down by next fall. According to Mr. Gilson, between July 1, 1942, and October 1, 1942, Maine lost 1,000 of her 6,000 secondary teachers. (Portland Telegram, Feb. 7, 1943)

The New England Council of Emergency Teacher Supply reported after a widespread canvass that elementary schools would have 2,840 vacancies in teaching staffs by September, with a maximum supply of only 764 candidates. Secondary schools will have an estimated 1,934 vacancies, with only 921 trained persons available. (Boston Herald, April 17, 1943)

Walter Englund, secretary of the Minnesota Education Association, stated that more than 4,500 school teachers left the Minnesota schools within the last year, comparatively few of them being replaced. At the same time the war department expects young men and women to be taught as quickly as possible all phases of mathematics and science to fit them for military duty. (Minneapolis Tribune, Feb. 9, 1943)

A large number of rural schools are going to be forced to close for the duration unless we can induce more former teachers to return to work, according to A. L. Crable, Oklahoma State Superintendent of Public Instruction. The state has an estimated 4,000 to 5,000 teacher shortage for 1943-44. (Oklahoma City Oklahoman, April 15, 1943)

The Southern States alone report a shortage of 3,568 teachers. Over 4,000 persons with emergency certificates only are now teaching in the public schools of the South. (Chattanooga Times, April 14, 1943)

Because of the urgent situation in the teaching field, which is paralleled in other necessary civilian services, the September program on women in war jobs of this kind can serve as education for the public at large and for former or prospective teachers to drive home the message that all women between 18 and 45, who have no small children to care for, should take necessary civilian jobs. The cover promotion which has been suggested--all national magazines have been asked to depict women in necessary civilian services on their Labor Day covers--is one important way to call the subject to the attention of magazine readers; it would be helpful if magazines also could carry articles and editorials on various phases.

This material was compiled in connection with the program to promote full use of womanpower in necessary civilian jobs which is being sponsored by the Office of War Information and the War Manpower Commission with the cooperation of national magazines.

6/3/43

OCCUPATIONS

TELEPHONE + TELEGRAPH

Magazine Division
Office of War Information
Social Security Building
Washington, D. C.

7/2/43

WOMEN IN THE TELEGRAPH INDUSTRY

Keeping telegraph communications going at full-tilt is a wartime necessity. That telegraph service has not been crippled by loss of manpower is due to womanpower.

To what a great extent this is true is manifest from the following report compiled by Western Union:

There are over 25,000 women in the Western Union organization now--more than ever before. The number of women employees has increased 71% excluding messengers, and 90% including messengers, since June 30, 1940. On that date 42% of the employees were women; at the beginning of this year 57% were women.

Women are replacing the 6,000 Western Union men now in the armed services. Most of them have husbands, brothers, sons or other relatives in the armed forces. In many cases their relatives in the service are Western Union employees on furlough, and some have as many as two and three sons or other close relatives furloughed by Western Union to the armed services.

Employment and training of women in large numbers represents no change in company policy. Increasing numbers of women have worked in the telegraph industry in operating and other positions since the 1850s. The change taking place now increases the number of women in many positions and also places them in work entirely new to women.

Jobs Open to Women in This Field:

Women serve with Western Union in many ways. In the main operating rooms in the larger cities, some 1,200 girl routing aides work on roller skates passing telegrams quickly to the proper operators for transmission, as the first step in their careers in the industry.

In 174 Western Union training schools over the country about 2,600 girls, many of them former routing aides, are studying and practicing to become operators, clerks and managers. Some 6,000 girls will be graduated from these schools this year and go to work at once in telegraph offices.

In the telegraph operating rooms today are thousands of women printing telegraph operators and telephone recording operators, and supervisors and assistant chief operators. In many cases these women are filling positions formerly held by men now in the U. S. Signal Corps and other units of the Army and Navy.

About 2,500 girls and women are serving as messengers today, where there were none two years ago. Since Western Union began employing girl messengers to replace young men who entered the armed services and various war plants, many young and middle-aged women have selected the messenger service as their means of aiding in war work. In one case a New York woman whose three messenger sons were going into the armed services became a messenger saying she wanted to do what she could to carry on their work at home. A number of women who have no economic need for employment are devoting their time daily to messenger work.

In the Western Union plant construction and maintenance organization also, there are many women doing jobs men always did in the past. The nimble fingers of these women are doing excellent work in forming wires for telegraph concentrators, switchboards and operating tables, in repairing armatures, in welding and in assembling telegraph apparatus under the supervision of experienced plant men. There are even some women "T.&R. men," capably testing, regulating and repairing the high-speed modern telegraph equipment.

Thousands of women serve as managers, counter attendants and operators in the main and branch telegraph offices. Large numbers perform billing, accounting, clerical, stenographic, addressographing, mimeographing and other duties in the district, division and general telegraph offices. An opera singer with a repertoire of fifty leading roles operates a comptometer in a division auditor's office. Women personal service representatives call on firms, assisting them in the solution of their communications problems.

There are even women who travel with many of the line gangs in their special trains to scenes of large construction and maintenance jobs on the pole lines. Usually the wives of gang cooks, they aid in taking care of the cooking, laundry and housekeeping problems of the line gang forces.

If so many women had not joined the ranks of telegraph workers, officials say, the high speed of service achieved by Western Union this year in handling the large increase in Government and war industry messages would have been impossible. The wartime job women are doing has earned the praise of telegraph officials.

This material was compiled in connection with the program to promote full use of womanpower in necessary civilian jobs which is being sponsored by the Office of War Information and the War Manpower Commission with the cooperation of national magazines.

7/2/43

Magazine Division
Office of War Information
Social Security Building
Washington, D. C.

7/2/43

WOMEN IN THE TELEPHONE INDUSTRY

America must have its telephone army--always a force predominately women--in order to win this war. Just as the backbone of our Army is its infantry, indispensable to the telephone army are the thousands of women at the switchboards, who actually establish the connections which start troop trains rolling, speed up war contracts, and give soldiers the lift in morale which comes through a long distance call home.

From material supplied by the American Telephone and Telegraph Company, 195 Broadway, New York, parent company of the Bell Telephone System, come the following facts which give a representative picture of war need for women workers in this field and the opportunities open to them there.

Scope of Women's Work:

In the Bell Telephone Companies there are currently some 232,000 women employees. Of these, 168,000 are at the switchboards handling local and long distance calls. Others are doing accounting and billing; serving the public at desks and counters; or are engaged in the work of the executive offices.

Because of the tremendous war load of telephone traffic--113 million calls a day representing an increase of 29 million calls over the level of August 1939--the telephone companies are having difficulty in a number of places, especially those in which the impact of war has been great, in recruiting adequate forces. Recruiting is active in every section of the country. It is estimated that this year more than 100,000 new people will be employed as telephone operators.

Type of Women Wanted:

Telephone companies need women in good health, with good hearing and pleasing voices, for the switchboard operators who constitute a large proportion of their hirings. Dependability is, of course, another important factor.

This is a natural field for the high school girl. Many of the new operators come to the telephone company direct from school. Graduation is not, however, essential to making application for a telephone operator's job. Some are trained after school hours and on week-ends and take part-time work while still in school. Others work for the telephone company during their summer vacation period, go back to the school in the fall, and return to the telephone company as regular employees when they are ready

for full time employment.

Opportunities also exist for the older woman. Some telephone companies are currently employing women without previous experience up to 50 years of age and older. Many women who do not want to work in factories and shipyards are finding in telephone work the feeling of helping the nation in its drive for victory. Wives of many servicemen are numbered among the employees.

Training and Opportunity for Advancement:

No previous training is required. Employees are trained by the telephone company, under methods which have been developed as the result of long experience and which are adapted to fit the needs of the individual concerned. Employees are paid while they are learning. Depending upon the nature of the work to which they will be assigned, from two to four weeks are required to complete the students' training course.

Almost from the beginning, telephone operators have been women. The work is a "natural" for them. Not only are all the operators women, but so are the supervisors, instructors and chief operators. Advancement to the higher positions comes from the ranks. There is thus an unusual number of higher grade jobs to which operators may advance.

This war has also brought to trained operators opportunities to go into war centers. For instance, 60 long distance operators from New York state were sent into Washington, D. C. to help handle the added load of war messages, and others were sent to Norfolk, Va. Similarly on the West Coast, 150 operators were sent into San Francisco from nearby towns.

Working Conditions:

Much attention has been given to the conditions under which the women in the telephone industry work. The rooms in which the switchboards are located are clean, well lighted and ventilated, and safe. The chairs on which the operators sit while at work and the head sets they use have been specially designed for the comfort of the employees. Telephone buildings generally have pleasant rest and recreation rooms. Dining service is provided in over 400 buildings where the size of the force and other conditions justify its operation. Most of the remaining buildings have kitchenette facilities where the operators can prepare their own lunches.

Basic work week for telephone operators is 5 days or 40 hours. Evening operators in many places have a somewhat shorter work day. In many of the war-affected localities, however, employees are now working 6 days or 48 hours a week, a few even longer.

It is the telephone company's policy to pay a wage which compares favorably with that paid in the same community by other concerns for work requiring comparable ability and skill. Increases are on a scheduled basis. Premium payments over and above the basic rate are made for evening, night, Sunday and holiday work which is required in providing continuous telephone service.

This material was compiled in connection with the program to promote full use of womanpower in necessary civilian jobs which is being sponsored by the Office of War Information and the War Manpower Commission with the cooperation of national magazines.

7/2/43

OCCUPATIONS

TEXTILES

extra copies

DEFENSE INDUSTRIES: GARMENTS

In Factories and Offices

(In News, January 30, 1941)

San Francisco. -- In factories, offices, hospitals, and Government bureaus women are playing a highly important role in the drama of national defense. They are even in the Army as hostesses. . . . . .

Needles flash, sewing machines hum and the deft hands of San Franciscans work cloth and yarn to turn out underwear and uniforms for the soldiers and sailors. Mattresses, comforters, sleeping bags, tents, sweaters, sheets, pillow cases are other items manufactured by women.

One of the biggest local clothing contracts from the War Department is keeping 100 women fully occupied at Heyneman-Eloesser Co. Their contribution to date consists of 55,000 work suits for the Army's army of mechanics, 2500 denim jackets, hundreds of suits of water and wind resisting materials for the Alaska defense troops.

In anticipation of greater defense contracts, Heyneman-Eloesser is advancing its training program, teaching girls the intricacies of power machine operation. Extra attention is paid to specialty machines required in the manufacture of mass goods for the forces.

Total employment by the firm is in the neighborhood of 500 with a payroll of about $400,000.

Levi Strauss & Co., besides work clothing, is contributing fur parkas for the Army and a number of other firms are making operating gowns, bathrobes and knitted goods. . . . . .

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wood copies

Women Workers in the Textile Industry During the War Period

(as indicated by newspaper clippings)

The Narrow Fabric Co. of Reading, Pa., has trained women to operate braiding machines. They are doing excellent work and are now running nearly as many machines as men. Other plants have employed women for years on slightly different types of braiding machines. (N.Y. Journal of Commerce, Jan. 27, 1943.)

Pictures: 3 women in Research and Testing Laboratory of Avondale Mills, Alabama, "engaged in various phases of yarn testing." 1 woman inspecting drill to be used in jackets and overalls for armed forces. (Daily News Record, March 9, 1945, p. 24)

Losing essential labor at an alarming rate in recent weeks and unable to replace men with women as has been thought possible, some underwear and hosiery mills on large Government contracts fear it will be necessary soon to drop the third shift. They will operate on a 16-hour working day with overtime when necessary. It is impossible to replace knitters called into service or leaving for better jobs. (Daily News Record, Oct. 27, 1942, p. 20.)

Cotton textile plants operating on government contracts will be allowed to employ girls 16 and 17 on night shifts in areas where there is a labor shortage. (Journal of Commerce, Apr. 10, 1943)

Nylon parachutes are being made, and tested entirely by women in a New England plant. (Philadelphia Inquirer, September 4, 1942)

Women are being trained at the Vocational school, Greenville, S.C., as doffers, roving haulers, sweepers, oilers and other jobs not usually considered women's work. Women can handle loom fixing with jobs broken down to remove heavy lifting. None have done so as yet. (Textile World, Mar. 1943, p. 38.)

The Berkshire Knitting Mill, hosiery makers, Wyomissing, Pa., employs girls instead of boys as helpers to leggers and footers. Girls are hired as cleaners, sweepers, and to clean dye vats with excellent success. Girl helpers learn first to clean the knitting machine, then straighten needles. They learn topping and duties of helper about machine. Training should take 3 to 4 weeks. (Textile Workd, Apr. 1943, p. 108.)

An open forum in Providence, R.I., Nov. 1942, discussed "Employment of Women in the Textile Industry to Replace Men." 15 dyeing operations that women could take over were listed. In one plant women are dyeing all lots weighing up to 50 pounds on Buhlman skin dyeing machines. In the picking department "women can do everything but lift bags." Women have been trained as braiders at the Narrow Fabrics Co., Reading, Pa., one woman was so adept she was given supervisory work: Examiners, instructor, machine fixer-making adjustments and minor repairs. (Ibid, Jan. 1943, P. 55.)

Cameo Curtain Mfg. Corp., Yonkers, New York, employs 475 women making insect netting and parachutes for the Army. (Apprentice-Training, May 19., 1943.)

Results obtained by training women for jobs once held only by men in the hosiery industry has exceeded all expectations, according to secretary of Southern Hosiery Mfgs. Ass'n. Women under men's supervision are doing a good job as full-fashioned knitters. In seamless mills it has been found that one man fixer with two girl helpers can look after 60 to 75 machines, while formerly one man cared for 25 machines. (Chattanooga Times, June 13, 1943)

About 40 percent of the employees at the plants of West Point Mfg. Co. and Kanett Bhackery and Dye Works, Alabama, are women. Many of them are on jobs formerly held by men. They are weaving, doffing and sweeping, as well as doing other jobs. At the Dye Works there are 300 women compared with 60 before the war. (Textile Bulletin, June 15, 1943)

If the armed forces rise to over 10,000,000 men by the end of the year, an additional 8 percent of the textile workers, or approximately 105,000 men, will be inducted if the law of averages holds. This estimated group will be replaced almost wholly by women. This replacement will mean the recruiting and training of about 100,000 women in the textile industry during 1943. (The U.C.C. Quarterly, Summer 1943.)

Statistics compiled in Spartensburg, S. Carolina, in connection with the "Textiles Go to War" Celebration show that in 1939 the ratio of male and female employment in the mills was two men to every woman. The latest count reveals that there are now 13,017 men employed and 9,547 women. This margin is narrowing weekly. (Daily News Record, 7/16/43)

A suggested plan is to have men "head fixers", assigning to each two properly trained women fixers. The Women do such jobs as adjusting picks, aligning reeds and boxes, adjusting warp tension, leveling harness, adjusting shuttle check, testing shuttle tension. The head fixers are used for the harder jobs or for those needing skills or knowledge beyond the women. (Textile World, April 1944)

A little over a year ago women were given the work of tending nappers in a mill producing cotton flannel. The finish of napped goods is determined largely by appearance and feel, and a tender needs considerable experience in order to handle the finish properly. The overseer was pleased to find that women could be put on their own after a four-weeks' training period and that they learned more quickly than men. All adjustment of the machines is done by a second hand of long experience. (Textile World, March 1944, p.77.)

What Critics Have Said of Poets, and Poets of Poetry—A London Letter

The Poets and Their Critics, by Hugh Sykes Davies. London: Pelican Books. 9s.
A Poet's Notebook, by Edith Sitwell. London: Macmillan. 10s. 6d.

LONDON

HERE ARE TWO BOOKS that are vastly entertaining and instructive. Hugh Davies's is an anthology of what critics have written about poets, and Miss Sitwell's a selection from what poets have said about poetry.

One is impersonal and historical. It is a series of lengthy quotations designed to show the fluctuations in the repute and standing of such men as Dryden, Gray, Donne, Pope, and Chaucer down the ages. The other is personal, illustrating the views held by poets on the difficulties and triumphs of poetry which a highly individual poet of our own day finds acceptable and convincing.

It need hardly be said that the personal book is Miss Sitwell's. She strikes the authentic belligerent note of her family even in her preface, when she refers to Walt Whitman as "that basely slandered man who was one of the greatest of all poets, that inspired and great soul who has been seen through the dirty eyes of little, mean, and meager souls."

After that trumpet call of battle, however, Miss Sitwell gives herself over to comparatively peaceful pursuits, seeking to isolate the nature of poetry in the definitions and observations of men like Wagner, Rimbaud, Blake, and Baudelaire, following this with a prolonged series of notes on technical aspects of poetry, and a consideration of the work of Wordsworth, Shakespeare, Herrick, Smart, and Chaucer.

* * *

On her first page Miss Sitwell quotes from a philosopher, an essayist, a poet, and a parson. It is the poet, William Blake, who has the most striking and vivid aphorism, exclaiming, on "the poet's nature," "'What,' it will be Question'd, 'when the Sun rises, do you not see a round disk of fire somewhat like a guinea?' 'Oh, no, no, I see an Innumerable Company of the Heavenly Host crying, Holy, Holy, Holy, is the Lord God Almighty.' I question not my Corporeal or Vegetative Eye any more than I would Question a Window concerning a Sight. I look thro' it and not with it."

Miss Sitwell obviously has a high notion of the nature and function of poetry, or she would not choose for her notebook quotations of so lofty a character. To her, in the words of Thomas Nashe, poetry is "the Honey of all Flowers, the Quintessence of all Sciences, the Marrow of Art and the very Phrase of Angels."

This is pitching the matter rather high, but it is at least clear and intelligible. Less immediately comprehensible, perhaps, is Wagner's definition of music, which Miss Sitwell equally applies to poetry, declaring it to be "the inner being, the essence of phenomena, the Will itself . . . the thing per se, which lies beyond all appearance." Intellects not so incisive as Miss Sitwell's may also be somewhat fogged by her reference, under the title of "Great Poems From the Depths," to Martin Scriblerus on "those primitive longaeval and antediluvian man-tigers, who first taught science to the world."

There are indeed many quotations made by Miss Sitwell which recall an anonymous judgment passed in the Monthly Review some time in 1768 on certain of the poems of Gray. This criticism, rescued from oblivion by Mr. Davies, remarks, "If to be mysterious and to be sublime be the sometime in 1768 on certain of performances must undoubtedly be deemed so."

But there are many others that are illuminating and delightful, whilst some of Miss Sitwell's own notes are valuable and unexpected. On "the power of words," for example, she observes: "Furious old lady, complaining of my own poems: 'Words, Words, nothing but Words.'

"Not *only* words, my dear lady. Yet see what only words will do for us. Compare these lines,

> And we'll gang nae mair a-rovin',
> A rovin' in the nicht,

from 'The Jolly Beggar,' by James VI of Scotland, and the final lines of Byron's 'We'll go no more a-roving,' a poem that begins with lines which are almost those of King James, but ends with

> Yet we'll go no more a-roving
> By the light of the moon."

Mr. Davies's "The Poets and Their Critics" is a more academic but equally attractive volume. It shows the vicissitudes that have attended the fortunes of poets, the long eclipse of Donne, for example, and his contemporary triumph, and the present shaky state of Milton's reputation and popularity. It is full of arresting and provoking observations, like Bagehot's on Wordsworth's sonnets, "There is nothing of the stir of life; nothing of the *brawl* of the world"; or Coleridge, "Dryden's genius was of the sort that catches fire by its own motion: his chariot wheels *get* hot by driving fast"; or De Quincey, "Milton is not an author amongst authors, not a poet amongst poets, but a power amongst powers."

Mr. Davies has done his job of selection exceedingly well. The criticisms he has chosen are not only criticisms of their subjects. They form a basis for criticism of their authors, and not only of their authors, but of the age in which they lived. They are, moreover, amazingly readable in themselves.

* * *

Nothing, for example, could be more lively than T. S. Eliot's comment on Milton, "Milton's celestial and infernal regions are large but insufficiently furnished apartments filled by heavy conversation; and one remarks about the Puritan mythology its thinness." Unless, indeed, it be Dr. Johnson on Gray: "The 'Prospect of Eton College' suggests nothing to Gray, which every beholder does not think and feel. His supplication to Father Thames, to tell him who drives the hoop or tosses the ball, is useless and puerile. Father Thames has no better means of knowing than himself. . . . I am one of those that are willing to be pleased, and therefore would gladly find the meaning of the first stanza of 'The Progress of Poetry.'"

And the best of it is that one can make up one's own mind whether it is Eliot or Milton, Johnson or Gray who is found wanting in these remarks.

HAROLD HOBSON

Additional book reviews appear regularly on the Editorial Page of THE CHRISTIAN SCIENCE MONITOR.

A Clergyman Looks Backward

Clerical Errors, by Louis Tucker. New York: Harpers. $3.

THE TRUTH OF Longfellow's admission that "things are not what they seem" is upheld in the title of Louis Tucker's "Clerical Errors," which, so far from being either a monument to orthographical inexactitude, or a disquisition upon the limitations of orthodox theology or theologians, is a vivid and entertaining autobiography.

Son of an Episcopal minister who had fought through the Civil War under the Confederate banner, Dr. Tucker himself entered the ministry—as his grandfather and great-grandfather had done before him—and the record of his varied career bears out his own assertion that "the ministry is the most adventurous of all professions."

Among his pastorates were churches not only in Louisiana, Arkansas, and Virginia, but as far north as Puget Sound, and his descriptions of his experiences are unfailingly interesting. There were times when, as his title suggests, he made clerical errors—after all, who does not, whether in lay or in clerical life?—but it is only fair to say that such errors generally hinged on technicalities, while what usually led him into them was a firm kindliness and consistent readiness to stand up for his convictions, no matter what the cost—and the cost was often considerable.

* * *

Dr. Tucker has an epigrammatic wit and an irrepressible sense of humor, and his book abounds in good stories, while his friends and neighbors, his fellow-clergymen and members of his congregations come to life in his pages. One good lady is described as "a real Christian. She went to church but never mentioned religion. She never scolded. She never even looked sad. She had her crosses—heavy ones as I know—but double-crossed them and made them means of blessing. If she ever fell from grace, she bounced."

Writing of a certain Anglican theologian, "a charming little bearded man," the author assures us that "when the devil invented dogmatic theology he forgot about such men as Dr. du Bose; they made the subject easy and interesting." Anyone who has wrestled with the intricacies of such dogmatic theology will wish he could have studied under Dr. Tucker's friend.

* * *

In the course of his long and eventful ministry, the author has found, and here records, many instances in which his prayers brought about or greatly aided the recovery of the sick. Not unnaturally he came in contact with many instances of cures wrought through the application of Christian Science, and while some of his parishioners were inclined to discount these healings, Dr. Tucker's fairness is evident in his response that "when a Christian Science patient gets well, praise them, and count it to them for a cure."

Throughout the volume, the writer gives continual evidence of his interest in and practice of Christianity, in contrast to what he aptly terms "Churchianity." While consistently loyal to his Anglican faith, he avoids the pitfalls of rigid denominationalism. Even agnostics have their good points, he admits, but "an agnostic does good like a cat getting its feet wet, and a Christian does wrong like a fish flopping around on shore."

Deep veins of beauty and of pathos intermingle with the humor of "Clerical Errors," and the author well brings out the salient points in his successive vignettes of human nature and its background. "I now forget," he writes, "what salaries I drew at several parishes; but the glint of a butterfly's wing in a sunbeam at each, or the toss of a child's curls as it ran, comes back with vivid clearness." Many should read, and will enjoy, this book.

T. L. L.

The Book Window

Outlook Pamphlets on Latin America (New York: Friendship Press, 25 cents each). Handy compendiums of information, with emphasis on evangelical Christianity. Separate titles on Brazil, Mexico, the River Plate Region, the West Indies, and the Western Republics. "Tales from Latin America," by Frank S. Mead, is a 50 cent pamphlet by the same publishers. It records incidents of Christian co-operation in Latin America.

Opportunities in the Armed Forces (Viking, $2.95). A handbook of information for civilians and service men and women on the United States Army, Navy, Marine Corps, Coast Guard, Merchant Marine, and Civil Aeronautics.

Men of the RAF, by Sir William Rothenstein (Oxford, $3). Artist alike with words and pencil, Sir William describes the fighters at bomber, fighter, and other stations in Britain.

Georgia Boy, by Erskine Caldwell (Duell, Sloan & Pearce, $2). The author of many stories of people who make a precarious living on the land in the South sets forth memories of boyhood.

South America, With Mexico and Central America, by J. B. Trend, in The World To-day series (Oxford University Press, $1.25). A pocket-size synthesis of outstanding facts, historical and current. Brief but authoritative.

Inter-American Affairs: 1941, An Annual Survey, No. 1, Edited by Arthur P. Whitaker, (Columbia University Press, $3). A compendium of carefully selected information, including a chronology and many tables. Extensive articles deal with economic and cultural topics.

The Chilean Popular Front, by John Reese Stevenson (University of Pennsylvania Press, $1.50). A brief but well-documented study of the rise and disintegration of the first Popular Front government in the Americas.

Rediscovering South America, by Harry A. Franck (Lippincott, $5). No longer travelling on foot except for occasional hikes, the author of "Vagabonding Down the Andes" a generation ago revisits familiar, but changed, scenes. Copiously illustrated.

Following Abraham Lincoln, 1809-1865, by Bernhardt Wall (New York: Wise-Parslow. $3.75), is a collection of etchings, with accompanying text, by the etcher-printer of Lime Rock, Conn. There are more than 150 of the illustrations covering every conceivable angle of the Railsplitter's life.

Swedish Immigrants in Lincoln's Time, by Nels Hokanson (Harpers, $3). A study of the prominent Swedes, like Ericsson, Admiral Dahlgren and the other Dahlgrens, General Rosencrans, and the astonishing number of Swedes who served in the Union Army, besides many not prominent.

Candleford Green, by Flora Thompson (Oxford, $2.75). Life in a remote English village, as seen from both sides of the little grilled window of the postmistress.



In addition to the traditional Liberal Arts work in languages, literature, social sciences, philosophy and natural sciences leading to the B. A. or B. S. degree, Principia College will for the duration offer war courses for both men and women. Among these is Map Reading, of immediate value to a number of war activities and of permanent interest in a post-war world of widened horizons.

Write for Interesting College Catalogue

The PRINCIPIA

Founded 1898 · Saint Louis, Missouri · Coeducational

Senior College · Junior College · Upper School · Lower School

A Roof Over Their Heads

IN KANSAS CITY, the humble trade of Omar, the tentmaker, has reached a new glorification and an all-time military importance.

Thousands of skilled canvas workers are busy every day creating from heavy, chemically treated, olive-drab fabric the kind of portable protection which is needed by an army of millions fighting a war of shifting battle lines all over the world.

Canvas today protects not only the soldier himself, his rations and his water, but all his fighting equipment as well—his guns, tanks, aircraft, and armored vehicles of every kind.

So the men and women who for years had interpreted their craftsmanship in the form of striped awnings, gay porch furniture and equipment for campers and sportsmen, like their trade-fellows everywhere, have gone into total war production. And here women handling the masses of weighty canvas fabric exceed masculine workers by a ratio of 7 to 1. Moreover, these women attack military articles with a zeal seldom displayed in smug peace years. More than 80 per cent of them are mothers, wives or sisters of men in the armed forces.

Now they produce light, intricate jungle tents, massive 4½-ton combat hangars, trim canteens, complex rucksacks and haversacks, simple army cots and mattress covers, gun covers in heterogeneous shapes and sizes, scientifically exact hospital tents.

More than 20 firms here have made the conversion to war assemblage. That figure represents virtually 99 and 44-100 per cent of Kansas City's canvas industry. The change entailed the increasing of pay rolls and personnel, the conducting of frequent "school hours" to teach employees the intricacies of a new army product, often the moving of equipment to new quarters where larger floor space was available.

But what the production army of women, interspersed with an occasional male for the heaviest tasks, has accomplished with millions of yards of canvas tells its own story. Visiting a few of the many plants will prove it.

* * *

Come, for instance, climb the wooden stairs of the American Fabrics Company here to the third floor where one half the production is of rucksacks and the other half of pyramidal tents. It is 11:30 o'clock at night and the "graveyard shift" is filing into the big, drafty assembly room.

The pungent odor of treated fabric is heavy in the air as cheerful women in coveralls and slacks shed coats preparatory to checking lunch pails for their "snack" around 2 or 3 o'clock in the morning. Soon the whir of power sewing machines, many of them still warm from use by the last shift, is sounded.

A bright American flag suspended from the ceiling is almost the only note of vivid color in the room. On one side of it, women stitch pockets, leather tabs and seams in the ski trooper's rucksack. The article is a compact but roomy luggage substitute, designed to provide quarters for a fighting man's rations, few belongings, and extra ammunition.

The "ersatz suitcase" passes down the informal assembly line from one machine and one worker to another. At the end it is inspected, less than half an hour after it began its journey. If it receives the approval stamp, it is firmly bound to a framework of metal. This frame is constructed to fit the soldier's back and rest against his hips, distributing the weight of the load. Finally, the camouflage cover, a white hood which renders the wearer invisible against the snow, is packed in a special pocket. The rucksack joins a growing pile of fellows, awaiting shipment.

On the other side of the Stars and Stripes, double needles zip through long lengths of canvas—pyramidal tents are in the making. Material for each of the structure's three canvas sides comes in seven pieces—two short, two a little longer, and three longer still. Each side, the seven widths sewed together, consists of about 28 yards of fabric and weighs about 26 pounds. A dexterous stitcher can pull 12 lengths through a double needle each hour.

* * *

The seven-piece tent section, now 18 feet wide, next is spread out for trimming and inspection. Approved, it is chalked for "eaves," a three-inch horizontal seam which serves to slant the tent's sides inward to form its roof.

Pulling and pushing that 26-pound mass of fabric beneath the needle is no light task for Mrs. Anna Stout, expert "eaves" sticher, who displays the typical spirit of women canvas workers.

"What my son went through at Pearl Harbor wasn't easy either," she scoffed. "Women like myself have to see our boys have all the material they need the next time."

Mrs. Stout's son, Lieut. William Arthur Beauchamp, was one of the men who defended Hawaii with inferior equipment at the time of the first Japanese attack. Back in the United States now, he is stationed in the Pacific coastal area.

The eaves stitched, flaps are sewed to the hem of the tent, rope apertures are punched and bound and the heavy jute ropes strung. Then the pyramidal structure is ready for door-installation and the attachment of the hood, a protective covering for the small open space at the top of the tent. Following a final inspection, another war article is ready for shipment to an army depot.

Now, to see how another army product is manufactured, come a few blocks away in the "canvas district" to witness the making of giant combat hangars. It is 7:30 o'clock and the first day shift is reporting at the Carnie-Goudie Manufacturing Company. In a great room, bare except for machines, the combined skills of about 125 workers must be applied an entire day to produce a single 9,045-pound hangar for motorized equipment.

Fourteen 500-pound sections must be created from narrow strips of fire- and moisture-proofed canvas. Eight thousand eyelets for rope lacing must be punched and bound. "Hardware," metal hooks and handles, must be sewed by hand. Heavy jute rope must be stitched to the canvas for reinforcement. Finally, each section must be checked carefully for faults and be rolled for shipment. Ten of these sections make the giant "garage's" roof and sides; four the curtains, two at each end. ("Hardware," rope, etc., make the extra weight.)

The ropers sit all day (or all night) on wooden benches, sewing heavy jute stout thread through thick double folds. The jute is full of short, bristly fibers which puncture a worker's hands like many minute splinters. Ropers laughingly explain their free time is so filled with splinter-removing they have few hours for anything else.

One of the women ropers with her own personal reasons for choosing the difficult, painful work is Mrs. Zella Brown. The mother of Warren Brown, an aviation machinist, injured in the battle of Midway, she is determined in her efforts, cognizant of the fact her tasks in their own right will help speed victory.

"Warren's job is harder," she asserts. "He had to stop gunfire. All I have to stop are a few splinters."

One of the most singular products to come from the efforts of canvas workers here is the jungle tent. An article weighing only about 14 pounds, it is carried in compact efficiency by the Army Air Corps. One man can sleep in it, safe from animals, reptiles, and insects. The "floor" is of gray fabricord. Moth green airplane cloth makes the moisture and mildewproof sloping sides. No openings but two small, zippered windows covered with mosquito netting are evident and the structure is snakeproof, because, once inside, the service man can pull slide fasteners to encase himself completely. The tent can be rolled like an umbrella around the light metal poles which support it.

ELIZABETH COULSON



"GARAGES" IN THE MAKING FOR ARMY EQUIPMENT

Skill and Courage Are Essential Qualities of These Industrious Women Who Sit on Wooden Benches in a Kansas City Canvas Plant and Sew Thick Rope to Weighty Sections of Combat Hangars and Tents

GUNNERS!



THEY GET THERE BY Hamilton TIME



When a big offensive begins, everything from machine guns to railroad guns must start firing *on time.* That's why many U. S. Army gunners wear a Hamilton Army Ordnance wrist watch. It's a wartime example of Hamilton's famous accuracy.

HAMILTON
The Watch of Railroad Accuracy



No one can resist Cookies made with CURTISS Baby Ruth CANDY

RECIPE ON EVERY WRAPPER

Candy

CURTISS CANDY COMPANY, CHICAGO, ILLINOIS
Producers of Fine Foods



"Erasers, You Know, Are Rubber, So From Now on a Mistake Will Be Regarded as Nothing Less Than Treason"

APPAREL MEN MAP WAR OUTPUT DRIVE

Directors of 17 Needle-Trade Groups Form Committee to Push Conversion

N.Y. Times

UNION PROMISES TO ASSIST

June 24, 1942

Dubinsky Says I. L. G. W. U. Will Not Insist on High Civilian Output Rates

A joint movement to convert garment factories from civilian to war goods production to meet growign military requirements and to avert the threat of widespread unemployment arising from fabric shortages and priority restrictions was launched yesterday at a meeting of representatives of employers and labor of this city's largest single industry—the women's and children's apparel trades representing 4,000 firms employing more than 200,000 workers.

The campaign was started at a meeting held in the offices of the National Coat and Suit Industry Recovery Board, attended by representatives of seventeen trade organizations and the International Ladies' Garment Workers Union. Morris W. Haft of Morris W. Haft & Bros., apparel industry consultant to John P. Maguire, regional director of the War Production Board, presided.

At the conference the executive directors of the trade organizations decided to constitute themselves as a committee to encourage individual manufacturers in their respective associations to seek war contracts. Means for facilitating this will be studied and competitive wage problems will be taken up with committees representing the union.

Speaking on behalf of the I. L. G. W. U., David Dubinsky, president, informed the meeting that his union was ready to cooperate with the employers to create war work in the New York market.

"To achieve this objective, the union will not insist on the higher rates for labor prevailing in civilian garment production," he said. "It anticipates, however, a similar cooperative attitude on the part of the employers who are seeking war work orders."

The differentials in labor cost and overhead charges between garment production in New York and in Southern and Midwestern localities, in which a considerable amount of needle trades war work is being done, was emphasized by several speakers as a competitive factor. Hope was expressed that the government procurement agencies would take into consideration in awarding contracts the higher standards and costs in the New York mark-

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Discussing means by which waste effort could be avoided in seeking war work, Mr. Hart declared that plans were under consideration by the War Production Board for the establishment of a permanent exhibit at which war-needed articles for all branches of the armed services would be displayed.

Philip M. McCullough, deputy re-gional director of the WPB, who attended the meeting, offered the facilities of the WPB in providing information on contract procedure, pooling of equipment, conversion of machinery and related problems. He pointed out that, although no contracts were awarded by the WPB ,it could assist in directing manufacturers to government procurement agencies.

In addition to the I. L. G. W. U., the following organizations were represented at yesterday's meeting: Affiliated Dress Manufacturers, Allied Underwear Association, American Cloak and Suit Manufacturers Corset and Brassiere Association of America, Industrial Council of Cloak, Suit and Skirt Manufacturers, Infants and Children's Coat Association, Merchants Ladies Garment Association, National Association of Blouse Manufacturers, National Coat and Suit Recovery Board, National Dress Manufacturers Association, National Skirt Association, tion, Popular Price Dress Manufacturers Group, United Better Dress Manufacturers' Association, United Knitwear Manufacturers' Association, and the United Popular Dress Manufacturers' Association.

America's Amazons

Dainty Hands Drop Embroidering to Stitch Parachutes for Our Soldiers of the Skies

Women's Delicate Touch Proves Valuable In Many Industries

Sixth of a series of articles on women in defense jobs by Inez Robb.

By Inez Robb
International News Service Staff Writer

The war now engulfing so much of the world with its savagery has introduced a startling array of martial novelties in the air and on land and sea. But no innovation has caught the world's imagination so forcefully as the Nazis successful use of parachute troops, especially in the Lowlands campaign a year ago.

The successful—and demoralizing—use of such troops in Belgium and Holland convinced a world that had snickered several years before at the Russians' initial organization of such a corps. Today, when American newsreels show American boys being trained as parachute troops, American audiences raise an enthusiastic clatter that sets the theater rafters ringing.

These American boys who float through the air with the greatest of ease, float that way because the talented hands of American women have fashioned their parachutes with expert and accurate care.

The parachute industry, which has grown at an astounding rate because of defense orders, is but one of the branches of aviation production in which women workers are at a premium.

Fifty per cent of the employes of the Switlik Parachute and Equipment Co., of Trenton, N. J., are women. Because of Government orders, the Switlik plant has increased its plant and facilities more than 400 per cent in the past 12 months. This company is now the largest manufacturer of parachutes in the world.

Surely no facet of war production is more strange and fascinating than the amount of sewing essential to the completion of war's most deadly weapons. As in the case of planes and tanks and barrage balloons, parachutes demand both quality and quantity in hand stitching.

Small and dainty hands that have embroidered hope chests, stitched trousseaux and spent loving hours on baby clothes have now graduates —cum laude—into the manufacture of parachutes. The best of everything—materials and workmanship —go into parachutes, every step of whose manufacture calls for precision.

Even the preliminary task, the laying of the silk for cutting, must be done with the greatest car by women to whom this job is intrusted. Silk is laid (and cut) for 25 parachutes at a time. It must be laid so evenly that not so much as a tiny ripple, much less a wrinkle, exicts in any layer.

Since 1,700 yards of silk are involved in this one operation, it is obvious that this is no simple task. It is hardly comparable to laying out five yards of silk on the dining room table, pinning on a paper pattern and reaching for the scissors.

There is constant inspection of every step of the chute in process of manufacture. For instance, women must see that the shroud lines are continuous. Under no circumstance can they ever be spliced or tied.

Women also work on the specially designed covers made to protect the parachute. These covers are so designed and made that they are water and dirt proof, but at the same time open instantly when the 'chute is in use and the rip-cord pulled.



WOMAN'S WORK at the Firestone plant in Akron, Ohio, is constructing barrage balloons

In all of these important operations, and in many others at the Switlik plant, women are busy and indispensable in the equipping of America's first parachute troops.

Nearby in Camden, N. J., other women are helping to build special instruments to guide America's mighty tanks, battleships and airplanes. They are the women who are employed in the assembling of special apparatus in the Camden plant of the Radio Corporation of America. Here are women literally engaged in the manufacture of delicate antennae to enable America's armed forces a[illegible] headed by an extraordinary young woman, Jewell Williams, senior woman supervisor in the special apparatus assembly division. Her mind and her fingers function with lightning speed. She herself worked out and then taught her co-workers to do more quickly by hand a number of technical jobs which men—because their hands are so much larger—can only do at best, with the aid of tools.

In one of the instruments vital to defense which now comes under her supervision, a short screw must be set deep in the mechanism. Men formerly did this with pliers. But Miss Williams has eliminated that time-consuming operation by the simple discovery that small feminine hands and slim fingers

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GARMENT WORKER

OFFICIAL JOURNAL OF THE UNITED GARMENT WORKERS OF AMERICA

VOL. XLI, No. 25 NEW YORK, MAY 7, 1943 SINGLE COPIES FIVE CENTS

WOMEN MAKE GOOD AS ARMY INSPECTORS.

Washington, D. C. (ILNS).—Women have done such a good job as Army Signal Corps inspectors that they now make up 40 percent of the entire inspection force, the War Department reports.

The first woman was assigned to this work less than 6 months ago in a Chicago plant making receivers and generators for airplane beacons. Other women followed quickly and now they form the nucleus of inspection units in factories throughout the country.

The women do the entire inspection job, from the mechanical work on the assembly line to the final check-up of the extremely complex electrical equipment. No man who is qualified for future call to military service can get a job as a new employe of one of these inspection units. Only women and physically handicapped men are being hired.

INSURANCE COMPANY HOLDS ANNUAL MEETING.

Announces Entry Into Accident and Health Field — Governor O'Conor of Maryland and President Green of A. F. of L. Laud Company's Progress.

Shareholders of The Union Labor Life Insurance Company at their Seventeenth Annual Meeting in Baltimore, heard their President, Matthew Woll, report on the Company's continued progress and were informed by him [illegible] Company is now authorized

Making plans now to cope with conditions which will arise after this war is ended seems only sensible to most of us, but it is meeting with ridicule and opposition from the big interests and some Congressmen and Senators. Since President Roosevelt sent his suggestions to the Capitol our legislators have decided to take it out of his hands and name a committee of their own for that purpose.

Vice-President Wallace is the man who has taken the lead in this work, to achieve what he calls the "era of the common man." He and his associates believe that in order to avoid future conflict every person, not only in this country but [illegible] world must

FIGHTERS OVERSEAS.

Picture millions of American fighters on every battlefront in the world daily smoking free Union Label cigarettes. This has been made possible through an arrangement made between I. M. Ornburn, Secretary-Treasurer, Union Label Trades Department of the American Federation of Labor and the officials of the Brown & Williamson Tobacco Corporation of Louisville, Kentucky.

In addition to the tremendous job labor unionists are doing on the home front by supplying American Union Label cigarettes by the millions for free distribution to our boys overseas, they are building good will for the American labor movement.

Every day more and more labor unions are sending orders to the Brown & Williamson Tobacco Corporation in Louisville for Union Label Raleighs which can be purchased at the unusual price of five cents a pack when $25.00 is contributed for the purchase of 500 packs. Many unions are sending 5000 packs at a cost of $250.00. For every order of this amount the Brown & Williamson Tobacco Corporation donates 500 additional free packs thus making the cost slightly more than four and one-half cents a pack.

With every shipment the makers of Raleighs place a special sticker with the name of the local union on each package of 20 cigarettes and a greeting card in every carton of 10 packages. Here is a typical message, "Here's wishing you good luck. We hope you enjoy the smokes!" Then the name and number of the local is printed and a request to the soldier or sailor to use the reverse side of the card to let the union know that the [illegible] received

FROM RELIEF [illegible]

Providence, R. I., is salvaging manpower from its relief rolls by finding jobs for persons who heretofore were considered "unemployable," by themselves as well as by possible employers.

The salvage plan, launched as an experiment, was placed on a permanent basis recently after $7 in relief costs were saved for every $1 the experiment cost, the American Public Welfare Association says.

Purpose of the program, operated by the city in cooperation with the Rhode Island division of public assistance, is to determine the employment potentiality of an individual through test then giving training if necessary, the finally, to [illegible] ment.

OCCUPATIONS

TRANSPORTATION

See ALSO OFFICE OF DEFENSE TRANSPORTATION

War File- Unpublished material - Misc.mate.
on Transportation- Women in
Field data by Mary Webb, May Bagwell.
Written by Geroline A. De Caux for W.B. for Wartime Employment of Women on Railroads
also other material on Transportation

FROM Personnel Supplies Division
Office of Defense Transportation

TRANSPORTATION: There are today 120,000 women who have taken their places in transportation occupations. Before the war there were less than 80,000. But even this 50 per cent increase does not truly indicate the vastness of the place of womanpower in transportation. That story is reflected in the variety of jobs they hold today--jobs which until now were always considered men's work. At the same time more and more women are entering the offices of transportation companies and doing the cleaning jobs on the planes, the trains, the buses and street cars.

AIR: The airlines have found the use of women to be satisfactory in many diversified occupations. Today women comprise about 25 per cent of the airline workers. The stenographic personel, the accounting personnel, and the food-service personnel are primarily women. Women telephone reservation clerks, reservation control clerks, ticket agents, airport clerks, and passenger agents are no longer unusual. Several hundred women may be found in the airport towers and in airway traffic control centers throughout the nation. Individual companies are now using women in the baggage department and in the maintenance department as welders, gas tank and magnaflux inspectors, and radio repairmen, riveters, sheet metal workers, spark plug cleaners, tool room attendants, upholsterers, cable splicers, and in accessory overhaul. Women are also used to clean and replace fuel pumps; to replace electrical and ignition systems; and to clean, overhaul, and check the vital plane instruments. In several of the airlines women may be found in many other occupations from link trainer operators who instruct airline pilots to fly by instrument, to women who load and unload the cargo of planes. There are also a few women serving as aeronautical engineers; chemists; district traffic managers; meteorologists; and traffic representatives.

LOCAL TRANSIT: The employment of women in the local transit industry is increasing although a large proportion of these women are employed in so-called "female occupations." Women are gradually being hired in a broader group of jobs but they comprise only about 4½ percent of the workers in local transit. The woman conductor is reappearing. In several parts of the country women may be found as street car and bus operators; they are also being hired as accident investigators; bench workers; cashiers; draftsmen; elevated railway conductors; gatemen; ground collectors; platform men; ticket agents; ticket examiners; surveyors; supervisors of welfare. And women taxi drivers are becoming familiar sights throughout the nation.

MOTOR: With few exceptions women employed by the inter-city bus companies are working in office and cleaning jobs, although in many cases they have replaced men in these positions, and women comprise about 11% of the total employment. A few women are working as baggage agents; bus dispatchers; conductors; dispatch clerks; gas attendants; information clerks; mail truck drivers and ticket agents. While there is some reluctance to employ women as bus drivers a few companies are beginning to use them for this work as well as for mechanical work in the shops.

On the other hand several trucking companies have found women to be very useful for the driving of light trucks. A few trucking companies are also beginning to employ women as chief clerks; claim adjusters; interline clerks; over-short-and damage clerks; rate clerks; safety department workers; trucking dispatchers; time keepers; and assistant terminal managers. There are also a few women serving as truck company executives and owners. There is one woman who operates a large common carrier fleet

which specializes in the handling of films; while another operates a fleet of trucks which hauls boats. Several women are in charge of their state trucking associations.

PIPELINES: Women constitute about 3 per cent of the personnel in the pipe line industry and are employed primarily as office workers. A few women are being introduced into the laboratory, but the nature of work is such that no marked increase in the use of women can be expected outside of the office.

RAIL: The number of women working on American railroads in 1940 was only about 36,000 and three-quarters of these were employed in offices. By the end of 1942 after a year of war, however, the number of women working on the railroads increased only to 40,000--still only about 3 per cent of the total railroad employment. Although the number of women workers is small, the variety of jobs which they hold is large.

Among the unusual occupations in which one or more women are now employed in the railroad industry are the following: accountants; auditors, ashmen; baggage and parcel room attendants; block operators; blue printers; car distributors; car tracers; car repairmen helpers; crew dispatchers; city passenger agents; crossing flagmen and watchmen; cashiers; chief clerks; dietitians; bridge tenders; draftsmen, editors of employee publications; engineers of service; engine wipers; electricians and electrician helpers; freight and passenger traffic representatives; freight car repairmen, foremen in laundries and gang foremen in shops, enginehouses and power plants; gatemen; hospital superintendents; information bureau attendants; interior designers; investigators; journal box packers; laboratory technicians; lawyers; mechanics and mechanic helpers; machinists and machinists helpers; passenger car inspectors; purchasing agents; railroad presidents; rate clerks; roundhouse clerks; superintendents of dining car service; section workers; steam hammer operators; signal towermen; scrap sorters and cutters; station agents; time keepers; travel bureau managers; teletype operators; telegraphers; telephoners; turntable transfer operators; traffic inspectors; upholsterers and upholster helpers; yard clerks.

WAREHOUSING: Although women constitute about 9 per cent of the workers in the warehousing industry they are primarily doing office work, since most of the work in a plant is considered too heavy.

WATER: Few women are engaged in water transportation; so far the majority of job open to women in this field are clerical and stenographic. A few companies employ women as cooks and maids on boats and barges. Occasionally a woman is reported to be serving as a boatman, a canalman or a lock keeper. There are women who act as masters or pilots of small vessels, as deckhands and those who help with the unloading of vessels, but such jobs are infrequent and except under unusual circumstances, unsuitable for women. Due to the heavy nature of most occupations on boats and to inadequate living quarters, only limited employment of women can be expected in this branch of the transportation industry.

Copy

Transportation

Division Of Press Intelligence
1526-14 St. N.W.
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RAILROAD WOMEN

(Abstracted from Gazette, Billings Mont.)

Women are at it again. About the last job one would expect a woman to hold would be that of railroad fireman, but there is one. So says Miss Hazel Cornell, president of the National Association of Railway Business Women. There are also two women locomotive engineers, and one woman brakeman (or should it be brakewoman?). Another woman is cutting railroad ties, and still another is a railway horticulturist. This job seems more in line with women's natural apitudes. Many, of course, of the association's 30,000 members work in railroad offices, two dozen do legal work for the roads, and a dozen more are railroad presidents or vice presidents.

As more and more railroad men are called to the colors, more and more women will succeed them. It all adds up to make a mere man feel slightly superfluous.

Editorial No date
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WOMEN'S JOBS IN TRANSPORTATION

Transportation is a war industry carrying the armed forces and civilian war workers to the places where they are needed, shifting the multitudinous items needed by both classes of workers, the raw material, the machines to process it. American railroads are handling about 30 percent more business with about 25 percent less equipment. One of the big airline reports that they are practically 100 percent on a war basis, war freight having priority over civilian passengers. This is probably true of all airlines. One of the pressing questions is manpower. One of the answers must be woman power. During the first world war more than 100,000 women were employed by the industry. Now the Office of Defense Transportation has decided tentatively that 300,000 may be at work moving men and materials before this war is over.

Railroads

The first woman was hired by the Baltimore and Ohio Railroad in 1855. While before the present emergency women's work in railroading has been chiefly in the offices, there has been of late a steady expansion into other branches. New white collar jobs include information desk work, ticket selling, work as rate clerks, cashiers, timekeepers and freight claim agents, as passenger and freight traffic representatives. Repair and maintenance of equipment is not unlike the type of work women are doing in factories. They are being employed in railroad shops as mechanics and mechanics' helpers, as machinists and machinists' helpers. Women are acting as section hands, helping in maintaining road beds. They work in roundhouses, operating the turntable, cleaning and oiling engines and seeing that they are supplied with water and sand. They clean cars and sweep the shops.

Newspaper stories of small groups or indviduals here and there, are idicative of jobs that more women may soon be doing. Women yard clerks go up and down the long lines of freightcars noting numbers and initials of cars so they may be returned to their respective roads. They record their destination, load and condition. A western railroad has a crew of women that follows the men doing the surfacing. They "dress the track" by building up a shoulder to shed water. This railroad has engaged a woman employment supervisor after more than 70 women had been hired. A woman in charge of one of two control towers in a busy station has to operate 87 switches.in getting trains in and out of the yards safely. Instructions reach her by means of lights flashed on a control board. Women have been hired as watchers to warn track gangs of approaching trains. Stories have been told of a woman who began operating a steam hammer in a railroad shop during the last war and has been doing it ever since. Another woman, a blacksmith's helper 24 years ago has returned to her old job.

Air Transportation

A return visit made to offices of one of the national airlines int the course of a study by the Women's Bureau furnished a vivid picture of the increasing opportunities for women in this field and the growing need for their services. From 1940 to 1942 women in the office increased about 170 percent, and their proportion advanced from less than half to more than two-thirds of all office personnel. They were about one-sixth of maintenance and operations workers in 1942 and one-third of other employees including hostesses, ,ticket sellers, pilots and technical workers. There was no report on their employment outside offices in 1940. Both expanding business and substitution of women for men has brought about the change.

Of eight chief clerks, five had been replaced by women. In semi-supervisory jobs - heads of department units - 25 women had taken men's places. All genera clerical, accounting and bookkeeping positions have been filled or are being filled by women.

In the operations department women are replacing men as flight control, maintenance and dispatch clerks, as radio and teletype operators, as meteorologists, and draftsmen. Others are in training to become instrument mechanics and spark plub cleaners. In the stock room 35 women have taken over men's work.

General reports from the industry indicate that women are moving into shops at other airports as sheet metal workers, welders, riveters, radio mechanics, machinist specialists and instrument repair men. They are in great demand for similar work on government airfields. They are even replacing men as machine-shop instructors.

City Transport Systems.

At least eleven large cities have begun the employment of women as bus operators, street car operators and conductors. A detailed report by the American Transit Association of methods of selection, training and special problems involved drawn from the experience of three Western cities, is very timely. Not far from 300 women are employed or in training by these three systems. They are being accepted wholeheartedly by the riding public. Their accident record is as good as that of men newly employed. The major weakness seemed to be a difficulty in maintaining established schedules. It was felt that this was partly due to the general and noticeable tendency of women to be extra cautious and should be overcome with experience. While men employees strongly resented the women at first, this soon passed.

Qualifications as to age range from 21 to 40 years, but one company at least had employed women up to 45 years of age. Certain specifications are set as to height and weight, but are not observed ~~so~~ rigidly. Most of the women ~~war~~ are married, being wives of men in the armed forces, in war industries, or in the employ of the transit company. A grammar school education is the basic requirement. While on of he companies tried at first to secure women with experience in driving heavy equipment such as trucks and tractors, this was soon abandoned and women employed have a great variety of backgrounds, clerical, sales, housewife, waitress, and so on. All applying for position as motor bus operators must have at least a year's automotive driving experience and must secure a chauffeur's license. This does not apply to applicants for training as street car operators. Selection procedure is identical to those for men applicants. Training may require from 11 to 17 days and in one city women motormen are given additional training for from 9 to 12 days.

Women in all companies are paid the same rate as men. According to State regulations, women may not be employed more than 8 hours a day, more than 48 hours or more than 6 days a week. They cannot work more than 5 hours in any one day unless this period is broken by a meal period of not less than 30 consecutive minutes. To meet these rules considerable juggling of assignments and runs have to be made and short reliefs provided. The companies are endeavoring to obtain a ruling relaxing these restrictions.

All women belong to the union and have all rights and privileges accorded male members. No special arrangement has been made with the union as to the duration of employment of women, their assignment, hours or working conditions. Women are expected to repair broken trolley ropes. replace fuses, cut out motors and make the same operating repairs as men. One exception is that in one system, they are not

required to climb to the top of street cars to repair broken trolley ropes since here they wear skirts instead of slacks.

Other Kinds of Transportation.

There has been a great advance in the employment of women in trucking, an estimated 5,000 having been added between June and November 1942. Although the number engaged as drivers is still relatively small, truck companies are using more and more women on light trucks and in some instances as drivers of tractor-trailers. A recent newspaper story told of two women who had driven 3,000 miles from Missouri to Florida with a defense load and were returning with citrus fruit. Some trucking concerns are employing women as chief clerks, adjustors, interline, rate and safety department clerks, trucking dispatchers, time keepers and assistant terminal managers - all posts usually held by men.

Press reports tell of women in other lines of transportation. In San Francisco, two gangs of 6 women and 2 men each, have been placed at the waterfront by the Longshoremen's and Warehousemen's Union. Men are to do the heavy lifting. Women will receive the same wage as men. An express terminal has hired more than 20 women whose work includes sorting and marking of packages. A woman has been hired as a barge captain and assigned to a 12-day haul from Buffalo to New York. Previously she spent two years with her husband on coal boats going between New York and South America.

No date

WOMEN IN TRUCKING

To find out just how women truck drivers compare with men, Rufus G. Jasper, fleet engineer, National Safety Council, studied the accident experience of approximately 700 women drivers and analyzed reports from 26 companies employing women drivers.

"Not one of these companies reported unfavorably on women drivers," Mr. Jasper said.

According to his observations, women without adequate training are more likely than men to have backing accidents, skidding accidents, accidents caused by misjudging clearances, and accidents caused by failure to set their hand brakes.

Some of the characteristics of women drivers which showed up consistently in Mr. Jasper's survey are as follows:

1. They are more willing than men to listen to instructions, but they resent discipline.
2. They are more likely to obey speed laws and stop signs.
3. They are more likely to keep their windshields and the inside of their vehicles clean.
4. They don't like to wear safety shoes.
5. They dislike wearing caps and neckties; they like to personalize their uniforms.
6. They are more likely than men to quit if the weather is unusually cold.
7. They are less likely to give advance notice when they quit.
8. Women bus drivers are likely to run five minutes late on their routes!

The Mare Island Navy Yard, California, employs a number of women truck and bus drivers. There 20 women drivers have mastered the art of handling heavy-duty tractor-semi-trailers, dump trucks, and passenger buses, and they are transporting materials, equipment, and yard workers daily. Their range of operation is mainly around the big yard itself and between the yard and Hunters Point Dry Dock in San Francisco, a distance of approximately 35 miles.....

Those in charge of transportation at Mare Island Navy Yard have been agreeably surprised at the ability and efficiency of women drivers, it is said.....

Elwell-Parker, makers of industrial trucks, made a survey to find out how many companies were using women to operate their industrial trucks. The survey showed only 3 per cent, or 19 of the 706 firms replying, had women industrial truck operators. Over 50 per cent however, indicated interest in substituting women for men operators.

Today there are about 30,000 industrial trucks in service moving raw materials, parts, boxes and other items in plants and warehouses. While an industrial truck does the work of 5 to 10 men, a woman operator can transport up to 10 tons with one of them and exert less physical effort than she uses in carrying a baby upstairs.

To help companies break in women drivers of their own and other makes of industrial trucks, Elwell-Parker has prepared an easy-to-understand book of instructions, called "Lady, will you give A Lift?" Containing over 20 illustrations, the manual tells the prospective woman operator how to run the truck, give pointers

on how it should be cared for and explain the importance of the job.

With the aid of the manual, it is said, women can be taught to drive an industrial truck in as short a time as a day.

E.C.

Mr. Geddings
Asst to Pres.
Capitol Transit
36th & M. Sts.

+30 wk after training
7 - driving
19 - taking fare
at Pentagon

Mi 6373

SURE I'M HANDLING A MAN'S JOB..



That Man Is Fighting the Japs. He's a Marine. What woman wouldn't be proud to do his work while he's away, fighting for us?

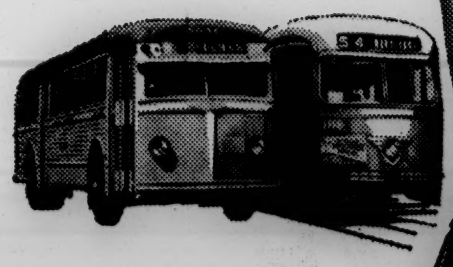
I belong to the WATS. I answered the call of Washington's vital transit system. I'm working for men like President Roosevelt, General Marshall, Admiral King and all the rest of our Nation's war leaders here in Washington. The tens of thousands of Washington war workers, under our Army and Navy chiefs, must be transported to and from their jobs daily. Our Washington transit system helps pump fighting blood into the throbbing heart of America's great war machine. Without it our entire war effort would be seriously endangered.

I want the strength to give more to America every day. I want to do a job . . . a real job. And I'm thankful I can do it. And we need more women who think as I do! HOW ABOUT YOU?

JOIN THE WATS!

WOMEN'S AUXILIARY TRANSIT SERVICE

- Choice of Street Car or Bus operation.
- No experience necessary to qualify. Motor Vehicle Operator's permit desirable but not essential.
- Applicants must be 21 to 45, with good hearing and good vision and must be able to pass a physical examination.
- Must be able to report between 6 and 7:30 A.M. and 2 to 3:30 P.M. or either period, and work at least 3 hours each time, Monday through Saturday.
- You are paid while in training. After training you are guaranteed a minimum of $33 for a six-day week provided you work both periods.
- All applications must be made in person on weekday mornings. Route No. 20, Cabin John Street 36th St. and Prospect Ave., N. W., Georgetown Car to door.



AUXILIARY Capital Transit SERVICE

Capital Transit Co.

LEWIS EDWIN RYAN
Advertising • WASHINGTON

Mr. Giddings
Special Asst. to Pres.
Re 6363
hiring women
for bus
drivers
has leaflet
on hours
wages, etc

SURE I'M HANDLING A MAN'S JOB..



That Man Is Fighting the Japs. He's a Marine. What woman wouldn't be proud to do his work while he's away, fighting for us?

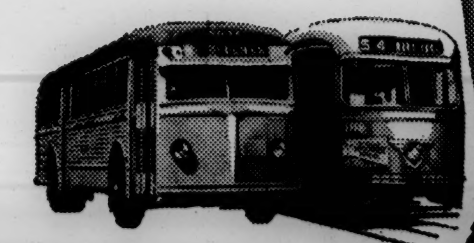
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AUXILIARY SERVICE

Capital Transit

Capital Transit Co.

LEWIS EDWIN RYAN
Advertising • WASHINGTON

Preliminary list of Truck Occupations
which are immediately suitable for women
(Training usually obtained previous to employment)

Accountant
Auditor

Bookkeeper

Cleaner
Clerk, File
Clerk, Statistical
Clerk, Payroll

Elevator Operator

Messenger

Office Machine Operator

- Accounting
- Adding Machine
- Addressograph
- Bookkeeping Machine
- Calculating Machine
- Card Punch Machine
- Comptometer
- Dictaphone
- Duplicating Machine
- Sorting Machine
- Tabulating Machine

Secretary
Statistician
Stenographer

Telephone Operator
Typist

Preliminary List of Truck Occupations
in which women may be employed after short period
of specialized training within the industry and with
a minimum of readjustment

Cashier
Claim Adjuster
Clerk, such as:
- Billing
- Chief
- Claim
- Interline
- Information
- Manifest
- Over-Short ~~or~~ and Damage
- Rate
- Shop
- Stock
- Traffic

Electric Truck Driver

Storekeeper Attendant

Teletype Operator

Preliminary List of Truck Occupations
that require longer training or often breakdown of jobs
and other readjustments

Armature Winder*
Automotive Electrician

Dispatcher, Truck
Driver, Truck

Electric Crane Operator

Freight Solicitor

Greaser

Laborer, Shop (clean up and servicing work)

Machine Operator*, including:

- Boring Machine
- Drill Press
- Grinding Machine
- Lathe
- Milling Machine
- Planer
- Shaper
- Woodworking Machine

Mechanic Helper or specialist

Painter

Terminal Manager, Assistant

Welder, Electric*
Welder, Oxyacetylene*

*If sufficient work for specialization

Magazine Division
Office of War Information
Social Security Building
Washington, D. C.

WOMEN IN THE TRANSPORTATION INDUSTRIES

The transportation industry, one of our most vital civilian services, because it is traditionally a man's field, has been one of those hardest hit by the draining of manpower to the military services and to war industry.

As the labor resources of the transportation industry have decreased, its labor requirements have risen to new heights. During the period from May, 1942 to January, 1943, employment in for-hire transportation increased from 2,512,000 to 2,634,000. About 120,000 women were employed in September, 1942, and the number has been steadily growing.

Even if no further expansion in employment were expected, the transportation industry would be facing the crucial problem of finding replacements. It is estimated, however, that by October, 1943, 175,000 more workers will be needed. Both replacements and new workers should come from the ranks of women.

Women in Air Transport

Because the air transport industry is relatively young, some of the traditional antipathy to women in this field is missing. When, therefore, one out of every three men employed was lost to the industry after war broke out, there was no prejudice against the use of women for replacements. No distinction is made between men and women, except for consideration of physical limitations, and women get the same training, opportunities for advancement, and seniority rights, as men. Women can enter the flight personnel only as stewardesses because the public rather than the air lines will not accept women as pilots or co-pilots. Except for flight personnel, women are now approximately one-third of the total employees of the industry.

The experience of American Air Lines, Inc. seems to be typical of the industry. At the beginning of the war, 80-90% of the women employed by this firm worked in the offices, and the rest were stewardesses. The percentage of women now employed in the various departments are as follows:

Traffic, reservation and ticket offices	73%
Accountants	77
Stewardesses	100
Stenographers	100
Storekeepers	84
Workers on the ramp	53

Work in the shops for women presents slightly different problems. Here women must sometimes overcome the prejudices of the foremen. Women are now employed in the shops as welders, sheet-metal workers, and engine repair and maintenance workers. There are also a small number of more highly skilled positions--publicity writer, photographer, junior meteorologist, office manager, materials laboratory assistant and radio operator.

Pennsylvania Central Airlines furnished the following list of specific jobs for which women are needed now:

- Traffic Representatives
- Passenger Relation Agents
- Reservation Clerks
- Ramp Service
- Teletype Operators
- Switchboard Operators
- Radio Operators
- Meteorology Clerks
- Draftsmen
- Link Instructors
- Photo Lab Assistants
- Nurses
- Laboratory Technicians
- All types office positions
  - Secretaries
  - Stenographers
  - Typists
  - File Clerks
  - Ticket Clerks
  - Key punch operators
  - Comptometer operators
  - Dictaphone operators
- Mechanic positions
  - Welders
  - Stock Clerks
  - Mechanics helpers

The following list of job descriptions was compiled by United Air Lines:

Stock Clerks: Employees in this classification receive, record and issue stock, pack and unpack materials and equipment. Previous employment in a stockroom or shipping room of a mail order or department store is an excellent foundation. Any clerical or sales experience is helpful. A bookkeeping course or general commercial course in high school is recommended. Starting rate, 56¢ per hour; hours, 48 per week.

Cabin Cleaners: Women in this category clean and maintain the airplane cabin interiors. Such tasks as removing and replacing towels and headrest covers, vacuum cleaning rugs and chair upholstery and washing walls are regular duties. The work, similar to housework, is not strenuous although an agile physique is required. Starting rate, 56¢ per hours; hours, 48 per week.

Station Attendants: Some women are being employed as station attendants to deal with passengers, mail and express. A good appearance and pleasing personality are assets in this position. Sales or service experience or employment in contacting the general public is valuable. Typing ability and clerical aptitude, although not required, are additional assets. A technical or commercial course in high school is recommended. Additional consideration is given to applicants with two years or more of college credits. Starting rate, $115.00 per month; hours, 44 per week.

Passenger Agents: Women are employed at United's larger and terminal stations to handle the enplaning and deplaning of passengers and to act as the company's representative in all phases of flight operations directly affecting passengers. Ticket validation and refunds and trip cancellations are regularly handled by these employees. They must be between 21 and 30 years of age, over five feet two inches tall, attractive and with pleasing personalities. Typing ability is an asset and a general commercial course in high school is recommended. Applicants with several years of college credits are preferred. Sales or service experience is valuable as an interest in dealing with the public is essential. Starting rate, $120.00 per month; hours, 44 per week.

Reservations Agents: Women are employed in reservations offices at major stations to control the utilization of the space available to passengers in United's Mainliners. They handle telephone calls for information and space, and assign space to passengers as requested or as it becomes available. They must be over five feet two inches tall and between 21 and 30 years of age. A natural sales ability, an agile mind with a good memory and a pleasing telephone personality are requisites. A commercial high school course, plus some liberal arts courses in college, furnish a good background. Starting rate, $115.00 per month; hours, 44 per week.

Counter Saleswomen: Women are employed in downtown traffic offices and are engaged primarily in a sales function. They provide information, assist in planning itineraries and handle most of the ticket sales. They must be between 21 and 30 years of age, over five feet two inches tall and have a pleasing personality, appearance and voice. Some college training in liberal arts and previous experience in meeting the public is required. Starting rate, $115.00 per month; hours, 44 per week.

Draftswomen: Women are employed to do routine drafting in United's engineering offices. To qualify, they must have completed a technical course in high school and have had training or experience in drafting. Training may be had at various art schools and all recognized trade schools which offer courses in drafting. A natural drawing or painting ability is an asset. Starting rate: No scale; hours, 42 per week.

Printer Operators: These women are employed in United's communications centers to type and relay messages passing over the company's private ground wire system. They must have a third class radio telephone operator's license or better and be able to type 30 words or more per minute on a teleprinter machine. Training may be had for high school graduates at several electronic trade schools which offer courses specifically for this work. The minimum age requirement is 18 years. Starting rate, $110.00 per month; hours, 44 per week.

Radio Operators: Women radio operators are employed in communications centers to handle two-way radio telephone communications between ground stations and planes in flight and to keep running records

of such communications. The requirements are the same as those listed for printer operators. Starting rate, $115.00 per month; hours, 44 per week.

Stewardesses: These women are members of regular United Air Lines Mainliner flight crews. They serve meals aloft, care for children, maintain various trip records, converse with passengers, seeing to their comfort and enjoyment of their flight and, generally, have charge of the plane cabin. To qualify, applicants must have had at least two years of college or university training, must be between five feet two inches and five feet five inches in height, must not weigh more than 120 pounds, and be between 21 and 25 years of age. Attractive appearance, a pleasing personality and an ability to deal with the public are other requirements. A college graduate who has had employment experience in meeting and handling the general public will have the highest consideration. Starting rate, $125 per month; hours, 100 per month maximum.

General Office Clerks, Stenographers and Machine Operators: Women handle the bulk of office routine in United's offices throughout the system. Such jobs may include the duties of personnel and statistical clerks, clerk-typists, stenographers, comptometer operators, accounting clerks and business machine operators. The general commercial high school course is recommended. Any competent stenographic or business school offers short courses in typing and shorthand that are excellent foundations for a typist or stenographic position. Typing speed should be 45 words per minute or better, and stenographic applicants should take dictation at 100 words per minute or better. The manufacturers of most business machines conduct schools to train girls in the operation of their machines. These schools usually provide the best training for those who wish employment in operating such machines. Starting rate: General office, $95.00 to $100.00 per month, hours, 42 per week; stenographers, $100.00 to $120.00 per month, hours, 42 per week; machine operators, $100.00 to $120.00 per month, hours, 42 per week.

Women are especially suited to work in the instrument department for work on small instrument parts. For the job of storekeeper the worker must learn to identify 20,000 machine parts. Workers on the ramp must expect to keep on the job in all kinds of weather. Today, all the turret lathe operators in one of the largest airlines are women. On the other hand, there are only five licensed women aviation mechanics, but many more are in training.

Women flight instructors now number 124. Most of them teach by flying slow and stable planes around and around one field. Others rarely get into the air, since they teach with the Link Trainer, a small imitation plane in which instrument flying can be taught.

The manpower problem in aviation is a matter of training rather than of sex. There was no reserve supply of skilled workers to meet the emergency, and for some jobs the high degree of skill necessary requires

long training periods. For the less skilled jobs a shorter training period is required. Some of the airlines give training courses lasting four to eight weeks in the fundamentals of the needed skills. Workers are paid full union scales while they are in training. The unions have also established short training courses for men and women. Many of the courses given by the public vocational schools through funds supplied by the United States Office of Education prepare women for jobs in aviation.

In order to facilitate the utilization of women, jobs have been broken down into simpler operations, rest rooms are provided, hot meals are served on the night shifts, and weight-lifting has been limited by contract between the companies and the unions.

Women in the Railroad Industry

Women have always been employed in some jobs in railroading, but the largest number was used for clerical work, and even there the railroads have preferred men. As of January, 1943, women represented only 4.8% of total employment in the field. It is expected that during 1943 the railroads will finally pass the last war's peak of 100,000 women employed.

Although their numbers are relatively small, the variety of jobs that women are now doing shows how extensively they can be used if the emergency demands. The Union Pacific Company has hired women as laborers in the stores department, helpers and laborers in the shops, and office workers. The number of women telegraphers and telephone operators has more than doubled. Union Pacific is not using women in train service, and considers track work too strenuous for them.

The New York Central Railroad employed about 5,000 women in March, 1943 and expects to be using many more. It has established a school in New York City to train ticket sellers, and two schools to train telegraphers. In the mechanical field, women are able to handle a number of jobs after short training periods, and they are working as welders, electricians, sheet-metal workers, painters, upholsterers, patternmakers and oilers. They are also doing such laboring jobs as engine cleaning, turntable operating and lubricating.

Among other jobs now held by women are:

steam hammer operator
rivet-heater
bolt-cutting machine operator
drill-press operator
tractor driver
round house clerks
stationary firemen
crossing watchman
locomotive wiper
scrap sorter and cutter
yard and crew clerk
crew caller
boilermakers
brakemen

Journal-box packers	bridge and building mechanics
draftsmen	section gangs
sandhouse attendant	crane operators in shops and
blueprinters	on sidings

All the companies report that women have been found satisfactory wherever they are employed. The Baltimore & Ohio regards them as reliable and conscientious workers. Employer resistance against the use of women in railroading is to some extent being overcome by the necessities of the emergency.

Training requirements vary with the jobs. Some lend themselves to on-the-job training, for others the industry is establishing its own training schools. Where specialized mechanical knowledge is required, the public vocational schools all over the country offer free vocational training courses through funds supplied by the United States Office of Education.

For some of the jobs a certain amount of physical strength is required. Others involve outdoor work, and applicants must be prepared to face exposure to all kinds of weather.

In order to promote utilization of women a number of adjustments must be made. When women work on machines, parts should be handled by conveyors, hoists or other mechanical devices that will take heavy weights. The height of platforms and work-benches should be scaled to the difference in women's height, and tools with smaller handles should be provided. Adequate wash room facilities and protective work clothes should be furnished. Ordinarily women require longer training periods than men, to accustom themselves to the unfamiliar setting of the shop atmosphere, the moving machinery and the use of the tools.

The Railway Labor Unions have expressed themselves as opposing the employment of women for dangerous jobs, for highly skilled jobs where insufficiently trained personnel might reduce the efficiency of the railroad's operation, and for too heavy or dirty jobs. The Brotherhood of Railroad Trainsmen is of the opinion that all available men be used before women are taken on, and has urged that the railroads relax their strict age and physical requirements for men. If it becomes necessary to hire many women, the Brotherhood feels that they should be considered temporary employees for the duration only.

Women Who Help Keep the Street Cars and Buses Rolling

Women have been employed in some jobs in the transit industry for many years, but as more and more men left for military service and for jobs in war industry, the bus and street car companies were forced to look to women to do many of the jobs traditionally held by men. Latest figures for the local transit industry show that in March, 1943 about 95% of the companies employed 12,415 women, as compared with about 8,800

employed in July, 1942. The 4,000 women employed in inter-city bus companies in July, 1942, rose to 7,209 in March, 1943.

Women are working as conductors on cars and buses, motormen, one-man street car operators, bus drivers, clerks in division and garage offices, ticket agents, cashiers, loaders, change-makers, traffic clerks, schedule clerks and accountants. In the shops, car barns and garages women are servicing cars and buses, making routine inspections, and doing electrical and mechanical work. They are repairing Diesel engines and other similar equipment.

According to Mr. Manford Burleigh, of the Great Lakes Greyhound Bus Company, it has been found that women can do practically everything a man can do. The transit companies generally are enthusiastic about their experience with women. Their chief problem is to find enough women applicants of the high caliber required for the jobs. It is estimated that personnel needs of inter-city buses alone will rise from 47,654 employees in March, 1943, to approximately 50,661 by September, 1943, in a survey of the industry by the United States Employment Service. The greatest need is for women in local transit, which in March, 1943, employed 238,000 men and women. The additions, as well as the replacements for men who are leaving, will have to come from our reserves of women workers.

There are no special types of women needed. The bus companies have found, for example, that some of the smaller women make as efficient bus drivers as the larger ones. The United States War Manpower Commission has declared as its basic policy for recruitment of women for the transportation industry that qualified women who are unemployed and registered with their local office of the United States Employment Service are to be referred to employment and training opportunities on an equal basis with men. Since many of the jobs, like those of motormen, ticket agents and dispatchers require much standing, women who have been sales clerks or waitresses are especially well qualified. They are used to being on their feet, to handling cash, and to meeting the public.

Much of the training necessary for these jobs is on-the-job training or is provided in training programs instituted by the industries. Where more specialized mechanical knowledge is required, the public vocational schools all over the country offer free vocational training courses through funds provided by the United States Office of Education.

State and federal laws on labor standards apply to the transit industry. These are generally followed by employers, and include an 8-hour day, 48-hour week and regular meal periods.

In order to promote the utilization of women in these jobs, mechanical devices should be adopted to lessen the need for lifting heavy weights, washroom facilities and protective work clothes should be furnished, seats for women bus and street car drivers should be

adjustable and the standards of good posture should be maintained. Adequate facilities for the children of working mothers should be provided as approved community projects.

As an example of the successful employment of women, three large bus companies in San Diego, Los Angeles and Oakland employ about 50 women bus drivers. The women handle the large passenger buses with no difficulty. They are given no preferred treatment in assignments to runs or shifts. The women like their jobs, and the public is pleased with the service they are giving. The California Greyhound Line which operates out of San Francisco employed 280 women bus drivers on short suburban runs in March, 1943. This was an increase of 60 over women employed by the company in January. The Baltimore Transit Company employs 63 women, 41 at work full time. Twenty-two others are in training to become street car operators. All of those now employed are operating the cars to the full satisfaction of the company.

Women in the Trucking Industry

Before the war, women in the trucking industry were few. Even in the offices there were men switchboard operators, clerks and stenographers. By April, 1942, a survey of the industry showed that women were 7.9% of the total number employed. As of November 15, 1942, another survey revealed that the proportion of women employed in the trucking industry had grown to 11.1%. About 50,000 women were employed by the industry in January, 1943.

Trucking companies employ women as drivers (in a few cases), platform workers, rate clerks, stock room clerks, and tool and parts room clerks. They are also urgently needed in the more traditional women's jobs of stenographer, file clerk, telephone operator and billing clerk. Private petroleum companies and other trucking companies are hiring women for lubricating work at service stations. The problem is to find enough women who are available for training.

Women can best be used in over-the-road trucking service. They can be trained without much difficulty in handling the heavy equipment involved. Local trucking service is not as good a field for women because it requires lifting and carrying heavy weights. In the case of private carriers--dairy, bakery and department store trucks--women can be successfully employed because the loads are light, hours are regular and equipment is similar to passenger cars.

For over-the-road service, women must be trained to operate power brakes, but this can be learned with a little practice. Women platform laborers require training in the proper way of loading, balancing loads and checking items. The truck companies provide the training. The office jobs require knowledge of office procedures, for which there are now many free quick-training courses being given all over the country.

The United States War Manpower Commission has declared as its basic policy for recruitment of women for the transportation industry that qualified women who are unemployed and registered with their local office of the United States Employment Service are to be referred to employment and training opportunities on an equal basis with men.

Irregular hours, night driving and long periods away from home present obstacles to the further utilization of women in over-the-road trucking service. There are many accommodations all over the country for male truck drivers, but a woman on the road would have difficulty finding suitable overnight hotel accommodations. Women also need more experience than most of them have in order to be able to handle breakdowns while they are on the road far from service stations. Adjustments will have to be made if women are to be successfully employed more extensively in this field.

There are not as yet many instances of women drivers of trucks in over-the-road service, and in only a few places are women driving small trucks in local service. In their brief experience as drivers of other vehicles, however, women are reported to have made satisfactory safety records, and if suitable applicants can be found, they are most acceptable to the industry, for the duration of the emergency.

There is some resistance to the employment of women in the trucking industry on the part of the unions. The International Brotherhood of Teamsters opposes the use of women for hauling coal and building material and for heavy over-the-road trucking. Decision as to the admission of women to membership in the Brotherhood is up to the local union, subject to review by the General Executive Board if there seems to be prejudice involved in the local's decision. When admitted, women are required by the union to agree to termination by the local of their membership when the emergency ceases.

Women Taxi Drivers

The hiring of women taxi drivers has become more and more widespread as the emergency has grown. Cleveland, Ohio, was one of the earliest to appeal to women to enter this field, and the so-called "Cabette Victory Corps"of the Yellow Cab Company now employs 105 women. They range in age from twenty-one to forty, and three-quarters of them are married. Although sturdy women seem better able to stand the work, there are no special physical requirements. "Cabettes" work only on the day shift, 7:30 a.m. to 4:30 p.m., with one hour for lunch.

The available manpower for the taxi industry is generally estimated as twenty percent short of requirements. In order to facilitate the hiring of women, cities are passing special ordinances permitting the licensing of women cab drivers, and the Taxi Drivers Union (AFL) has relaxed its ban on women members. There has been some employer resistance, but it vanishes as women are tried and found satisfactory.

The training period for drivers is usually brief. The Yellow Cab Company of Cleveland, for example, conducts a four-day training course. The women are taught to familiarize themselves with all important buildings and streets. They learn traffic rules, company rules, meter checking and record keeping. The company furnishes attractive and serviceable uniforms for summer and winter, the cost of which is divided between the company and the driver.

The record of other cities is equally good. In Philadelphia women are driving cabs and acting as mechanics, mechanics helpers, cleaners and washers. In San Francisco women already comprise most of the garage force and have replaced all male dispatchers and office clerks. Recently they have begun to work as drivers. There are 100 women drivers in Los Angeles, and they are proving to be very satisfactory. In many cities there have been women drivers for about a year and a half. This is true of Milwaukee, Wisconsin; Buffalo, N. Y.; San Diego, California. (100 women drivers in San Diego)

Other cities where women are employed as drivers include Salt Lake City, Utah; Detroit, Michigan; Long Beach, California; Oakland, California (25 drivers); Omaha, Nebraska; Louisville, Ky.; Seattle, Washington; Wichita, Kansas; Sacramento, California; Dallas, Texas; Palo Alto, California; Baltimore, Md.; Clarksburg, West Va.; Haverhill, Mass.; Utica, N. Y.; Rockford, Illinois; Minneapolis, Minnesota; Tulsa, Oklahoma; Springfield, Missouri; and Syracuse, New York.

This material was compiled in connection with the program to promote full use of womanpower in necessary civilian jobs which is being sponsored by the Office of War Information and the War Manpower Commission with the cooperation of national magazines.

6/17/43

U. S. Department of Labor
WOMEN'S BUREAU
Washington

WARTIME EMPLOYMENT OF WOMEN

ON

RAILROADS

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LETTER OF TRANSMITTAL

United States Department of Labor
Women's Bureau
Washington, D. C.

SIR: I have the honor of transmitting a report on the wartime employment of women on railroads, which analyzes the extent of their wartime employment in this key war industry and describes their jobs and working donditions.

This report is based primarily on the data obtained in 1943 and 1944 by regional representatives of the Women's Bureau who gave on-the-ground counseling service to a number of railroad installations desiring to expand the employment of women in occupations normally filled by men.

The field data was obtained by Mary Alice Webb and May Bagwell. The report was written by Caroline A. De Caux.

Respectfully submitted,

Frieda S. Miller, Director

Hon. Louis B. Schwellenbach
Secretary of Labor

SUMMARY OF FINDINGS

The railroads normally employ a very small proportion of women and restrict them largely to clerical, cleaning and other "housekeeping" and personal service jobs. But after Pear Harbor thousands entered the industry and many took over jobs filled exclusively by men in the past.

Between September, 1942 and July, 1944, the female force of Class I roads more than trebled, increasing from 40 to over 116 thousand, and the total in non-clerical occupations increased sevenfold, rising from less than 6 to almost 40 thousand.

Women's importance in moving the nation's wartime traffic is indicated by their employment in about two-thirds of the 128 railroad occupational groups, and by the fact that the 76,000 addition to the female force represented more than 60 percent of the total 1942-1944 personnel increase on Class I roads and about one-fifth the personnel expansion in the 1940-1944 period.

Although even at the peak of their employment women filled only about 8 percent of ~~the~~ all railroad jobs, in this industry where operations are geared to split-minute schedules and where every unit of equipment must meet exacting safety standards, they represented an extremely important margin of labor.

However, a survey made by the Women's Bureau on 6 roads revealed sharp variations in the proportion and occupational distribution of women between systems and indicates that a much larger number could have been used to relieve the acute labor shortages that continued in this vital industry throughout the war.

On these roads the percentage of women in the non-clerical force ranged from 1.3 to 9.5 percent, and in the important maintenance of equipment divisions from 3.5 to almost 17 percent. On comparable installations women in some cases were only 5 percent while in others they were 25 to 30 percent of the employees. Only a few cases were found where they were doing unsuitable work, but many were reported where suitable jobs were either unfilled or filled by men.

On roads with the largest female force, they were in a wide range of maintenance and transportation jobs previously closed to them. They were in almost every type of locomotive and car shop, operating monster hammers and punch-presses, less formidable drill presses, lathes and other metal working machines, and assisting skilled mechanics on an endless variety of production and repair operations. They were in roundhouses and yards servicing, oiling and cleaning locomotives and cars, operating transfer and turntables and helping on light repairs; and they were on track, roadbed and lighter maintenance of way and buildings jobs.

In the transportation divisions they were in almost every non-operating occupation, and a large proportion filled highly responsible and exacting jobs as telegraphers, telephoners, small station agents and crew callers and dispatchers. A number were also employed in the very select train operating crews.

While most women in the maintenance divisions were laborers and coach cleaners, one-third on the largest road and about a fourth in the industry as a whole were skilled mechanic's helpers. Five of the six roads had few or no women in skilled production jobs, but on one some were employed in every craft, including such unusual occupations as blacksmiths, boilermakers, car inspectors and foremen of skilled labor.

On all reporting roads women received the same wage rates as men, on most they had the same seniority protection and were upgraded on the same basis as men. However, they were generally excluded from skilled production jobs, and on the largest road all those hired during the war ofor maintenance work were considered temporary employees. On 5 of 6 roads, however, all who were in maintenance and clerical jobs had the status of permanent employees and could be displaced only on a seniority basis.

* * *

INTRODUCTION

In order to handle the nations wartime traffic, the railroads had to add over 400,000 employees to their force, between 1940 and 1944 and about one-fifth of this additional personnel were women. But they were among the last man-employing industries to increase the employment of women or to admit them into occupations normally filled by men. Even in September 1942, 9 months after Pearl Harbor, when Class I roads reported a shortage of some 60,000 workers, only 3 percent of their total personnel and less than 6 thousand of over a million workers in their non-clerical divisions were women. 1/

However, as traffic mounted to unprecedented levels and men by the thousands left the industry to join the armed forces or to seek better paying jobs, labor shortages became more acute, and women began to fill many critical gaps in the labor force of this key war industry. As a means of excellerating their employment, the Office of Defense Transportation early in 1943 summoned a conference of management, labor and government representatives to discuss the necessity and feasibility of expanding their employment in all domestic transportation services. The urgency of this problem was pointed out by the chief of the O.D.T. Division of Transport Personnel who told the conference that:

> "As manpower shortages become more acute, one of the major sources of labor from which all branches of transportation must draw will be the women of the nation." And added, "They are our great hope if the transportation systems of the country are to be kept effectively running...
>
> "Never before in the history of the nation have we looked to women as we do today to meet such a problem....During 1943 many thousands will be needed to fill transportation occupations which up to this time have been handled exclusively by men."

1/ Class 1 steam railroads include all steam railroads (other than Switching and terminal companies) having an annual operating revenue of more than $1,000,000. In the 1942-1945 period they accounted for more than 94 percent of the total employment of all steam railroads, including switching and terminal companies.

The Women's Bureau was one of the agencies participating in this conference, and at once instructed its regional representatives to render assistance to railroads interested in an expanded use of women power. This was one of a number of war industries to which Bureau representatives gave on-the-ground counseling service. One of the largest systems in the country requested the Bureau to examine the employment practices on all its installations and recommend methods that might facilitate more extensive employment of women and reduce turnover among them. Between the spring of 1943 and 1944 Bureau agents observed employment practices on all important industrial installations of this system and on 1 to 3 installations of 5 other roads.

In the course of these visits much information of value to other roads was secured. This included data about new jobs on which women were or could be employed; the suitability of their new occupations; their wages, hours, promotion opportunities and other working conditions; their training, personal facilities, and other personnel practices that had a bearing on the availability and stability of women employees and on their safe and efficiency employment in occupations previously closed to them.

In this report the findings made on the installations visited as well as the industry-wide employment trends and women's post war opportunities on the railroads are analyzed and summarized.

-5 & 6

SCOPE

In all 13 industrial installations on 6 of the 32 largest railroads in the country were visited. In April, 1944 these 6 systems employed more than 370,000 workers, or about one-fourth of the total force, and over 43,000 women, or two-~~thirds~~ fifths of female personnel of all Class 1 steam railroads. The installations visited, however, had only 85,000 employees at the time of the survey, and _____ of the total were women.

Actual observations of women's jobs and working conditions were limited to the maintenance divisions (where the majority of the women in non-clerical jobs were employed). Statistical data, however, are were obtained showing the distribution of the total female force on these roads in all the standard occupational classifications.

In addition, Interstate Commerce Commission quarterly reports (issued since January 1943), which show the distribution of the entire female personnel of Class 1 railroads in the ~~standard~~ 128 I.C.C. classifications have been analyzed. But since many of these I.C.C. classes--especially of maintenance workers--cover a considerable variety of jobs, this data has been used to indicate only the overall trends and the broad outlines of the industry-wide (female) occupational pattern. The more precise information in this report, relating to the nature of the work women were actually doing and to their employment conditions, is based on the findings made in the Bureau Survey.

THE INDUSTRY AND ITS LABOR FORCE

Wartime Importance of Industry and Size of Labor Force.

The provision of adequate rail transportation was basic to the fulfillment of the nation's war production and military training program. For notwithstanding the extensive development of motor-truck, intercity bus, airway, pipeline and inland waterway transportations since World War I, the railroads have remained the most important branch of the domestic transportation system and have handled the bulk of the wartime traffic. In the 1942-1944 period they provided more than two-thirds of the domestic freight transportation, and their operations, both in passenger and freight miles of service greatly exceeded all previous records. 1/

For decades the railroad labor force has ranged among the largest industry groups in the country. Although in the 1920-1940 period it was cut by almost 50 percent, at the beginning of the war Class 1 roads still employed about 1 million workers. In order to handle the unprecedented volume of wartime traffic these systems added about 400,000 workers to their force by 1944, and almost one-fifth of these new workers were women.

Nature of Railroad Operations and Character of Personnel

1/ The revenue tons carried one mile by Class 1 railroads in 1943 exceeded the 1918 total by 73 percent - the 1940 total by percent. The number of passengers was twice as large as in 1940 but lower than in 1918. However, due to longer trips per passenger, passenger miles were about 300 percent above the 1940 ~~xxxxxx~~ and 100% above the 1918 level. In the first 6 months of 1944 the railroads carried 75% more tons of freight and over twice as many passengers as in the first 6 months of 1940.

Railroad operations fall into three broad categories: (1) transportation, (2) maintenance, and (3) the clerical technical and managerial activities connected with these activities. While transportation is the primary function of the industry, in terms of numbers of workers employed, maintenance is by far the largest branch of operations. This is primarily due to the fact that railroads build and maintain their own right away, and repair and service all their rolling stock and other equipment. This work involved continuous maintenance of almost 400,000 miles of track, tens of thousands of bridges and structures, over 40,000 locomotives and over 2 million freight and passenger cars.

The railroad personnel, therefore, in addition to the many special operating and non-operating transportation groups, includes large corps of workers from every major industrial craft and sizeable groups of building trade and construction workers.

Under Interstate Commerce Commission regulations railroads classify their industrial personnel into two major maintenance and two transportations divisions, while the clerical professional and managerial occupations are classified into two separate divisions.

The distribution of the railroad personnel in these 6 divisions is indicated in the table below:

Number and Distribution of Class I Railroad Employees by Major Divisions - Mid-July, 1944

Occupational Groups	Number	Percent of total
I. Executives, Officials and Staff Assistants	14,651	
II. Professional Clerical and General	232,084	
III. Maintenance of Way and Structures	314,373	
IV. Maintenance of Equipment and Stores	393,400	
V. Transportation (other than train engine and yard)	170,198	
VI. Transportation (Yard [redacted], train and Engine)	318,181	
Total	1,442,887	

The Maintenance of Ways and Structures Division includes all the activities connected with maintaining the tracks, yards, and other fixed facilities in condition. The work of employees in this branch includes construction as well as continuous inspection and maintenance of roadbeds and tracks, telegraph and other signaling equipment, bridges and buildings, and all other stationary facilities.

About 20 percent of the railroad labor force is engaged in these activities and approximately 90 percent of these workers are section and gang laborers. Other sizeable groups include: skilled building and construction trades workers and their helpers; signalmen, signal mainainers, and helpers, and operators of portable steam and pumping equipment used on construction work.

The largest groups of unskilled employees are in this division. However, most of this work is heavy and rough or for other reasons largely unsuitable for women. Normally few women are employed in this branch of operations.

The maintenance of equipment and stores division embraces all the activities involved in keeping rolling stock (cars, locomotives and other vehicles) and other equipment in condition, and the receipt, storage, issuing and salvaging of supplies used in railroad operations. The maintenance of equipment work includes cleaning, oiling, and inspection of all rolling stock as well as the repair renovation and rebuilding or building of equipment. All railroads have shops where their rolling stock is repairds, many build and rebuild their cars, and some even build their own locomotives. 1/

Since each car and locomotive is made up of hundreds of parts and all equipment must meet rigid safety specifications, much skilled workmanship by expert mechanics is required from the original inspection and dismantling through all the repair, production and final reassembling operations. In addition, a great deal of the skilled work as well as the semi-skilled and unskilled is very heavy.

There are, however, numerous production and repair operations that are light enough for women and require relatively little experience or training. And there is of course a great deal of servicing and renovation work that is essentially of the cleaning variety.

1/ This branch of railroad work has been even of greater importance in war than in peace. For shortages of materials and labor for new equipment coupled with the extraordinary volume of traffic, necessitated the most intensive utilization of available facilities, and increased correspondingly the work involves in keeping them in safe operating condition.

Close to 29 percent of the railroad personnel is in this division and more than half are skilled mechanics representing every shop craft. Other skilled groups include inspectors of equipment, shops and stores; stationary engineers and firemen; oilers and, of course, the foremen. The semi-skilled and unskilled groups include: the mechanic's helpers, the apprentices, the laborers and the coach cleaners. Normally the propertion of women in this division is very small and they are generally excluded from production operations.

Transportation (other than train engine and yard)

Practically all non-operating transportation employees(except clerical and professional) are in this division. Numerically important groups include: the telegraphers, telephoners, and towermen; the small-stition agents; the baggage, parcel room station and train attendants; the station, warehouse and platform truckers; the crossing and bridge gatemen and flagmen; the loaders, callers, sealers and inspectors of perishable freight; and the various kitchen and dining service employees. Laundry workers are also in this division. Small but highly ranking groups include the large stationmasters and train dispatchers.

Transportation (Train Engine and Yard)

This division includes all the operating employees engaged in the actual movement of trains. The ICC subdivides these workers into two groups. One includes the yardmasters, switch tenders, hostlers and their assistants. The other, the locomotive engineers and firemen, the conductors, brakemen, flagmen and road baggagemen.

Professional, Clerical and General:

In this division are classified all the clerical and professional as well as some non-clerical employees. About one-seventh of the total are in the latter group and they include patrolmen, watchmen, printers, elevator operators, motor car operators and some of the custodial workers.

Miscellaneous Trades workers

EMPLOYMENT OF WOMEN

Industry Trends

The maintenance and transportation divisions of the railroads were almost exclusively a man's world before the war. As late as September 1942, the entire industry had less than 6,000 women in these divisions - mostly in cleaning and personal service jobs. Even in the clerical force, where women predominate in a few occupations, they were a relatively small minority (less than 20 percent) and men secretaries, stenographers and clerks are still popular in the industry.

Although some feminist historians like to emphasize the fact that employment of women on the railroads began in the middle of the last century, when a charwoman was engaged on a large road, though most of the railroad era the proportion of women in the industry has been small and few women employed in industrial jobs. However, during the present war, as well as during World War I women represented a very substantial portion of the war-time addition to the personnel, and close to half the new employees entered industrial occupations.

In 1910 less than 22,000, or about 1½ percent of the railroad employees were women. In 1918 the total rose to more than 100,000, or to slightly over 5 percent of the personnel. But by 1940 the U. S. Census showed only about 37,000 women among the 1,100,000 workers claiming railroad employment - or approximately 3.5 percent.

No marked expansion of the female force occurred in this industry until wartime labor shortages became quite acute. In 1941 Railroad Retirement Board data indicated that the proportion of women was below 3 percent. Even in September 1942, when Class I railroads, in a survey made by the American Association of Railroads, reported close to 60,000 unfilled jobs - only about 40,000, or approximately 3 percent of their personnel were women, and only about 5,600 were in non-clerical jobs.

The following two years, however, witnessed a striking increase in the size of the female force. By mid-January 1943 Class I roads had more than 63,000 women on their payrolls. Within another year the number rose to 106,000 and by mid-July 1944 to over 116,000. In the divisions reporting female workers their proportion rose to almost 10 percent, and in the total force to more than 8 percent.

This was the largest number andproportion of women ever employed on the railroads. The importance of the 76,000 wartime addition to the female force is perhaps best indicated by the fact that it represented about 60 percent of the total personnel increase reported by Class I roads between September 1942, and July 1944, and approximately one-fifth of the 1940-1944 increase.

But more significant than the overall expansion, was the sharp rise in the nonclerical divisions, where the number of women increased from 5,600 to almost 40,000, or more than sevenfold, and where they were admitted into a great varioty of occupations filled formerly only by men.

The distribution of the 1944 female personnel in the six railroad divisions is indicated in the table that follows. (see table — page — for detailed occupational distribution)

~~Total and~~ Distribution of Women Employed on Class I Steam Railroads - by Division, Mid-July 1944 1/

Occupational Divisions	Number	Percent of Female personnel	Percent of Total personnel
Executive, Officials and Staff Assistants:	18		0.15
Professional, Clerical and General	77,010		33.40
Maintenance of Way and Structures	2,746		0.94
Transportation (other than train, engine and yard)	12,948		7.97
Maintenance of Equipment and stores	23,333		6.19
Transportation (Yardmasters switchtenders and hostlers)	69		1.40
Transportation (train and engine)	301		0.34
Total, Reporting divisions in which females are inc.	116,425		9.95
Grand total, All reporting divisions	116,495		8.07

1/ Interstate Commerce Commission figures.

As these figures show, two-thirds of the female force was in the clerical divisions, and of those in industrial jobs almost two-thirds were in the maintenance of equipment and stores divisions. However, even in 1944 women accounted only for about 6 percent of the employees in this important industrial branch of operations. That this was not due entirely to lack of suitable work is indicated by the data obtained on the roads included in the Bureau survey. They reveal extreme variations in employment practices between systems, and indicate that a much larger proportion of women could have been used to relieve the critical labor shortages that continued in the industry throughout the war.

Employment Trend and Variations on 6 Selected Roads

None of the 6 roads in the Bureau survey employed many women before the war. The largest had only about 1,300 in its force in peacetime, some 4,600 in September 1942, but over 22,000 by mid-April 1944. Another expanded its female personnel in this 1942-1944 period from approximately 2,400 to 6,500, and a third from 1,450 to 3,000. The total increase on 5 reporting systems in this period was from 7,650 to almost 34,000. The sixth system, which had few women before the war (no figures obtained), employed more than 9,000 in 1944. In April 1944 these 6 roads had altogether 43,333 women, or approximately two-fifths of the female personnel on all Class I railroads. They employed three-fifths of the 23,300 women in maintenance of equipment and stores jobs; two-fifths of the 2,740 in maintenance of way jobs; over 46 percent of those in the transportation services and approximately 30 percent of the total clerical occupations.

The proportion of women in the total force of these 6 systems was approximately 40 percent above the industry average. Over 21,000 or almost half their women employees, as compared to only one-third in the industry as a whole, were in non-clerical occupations. More than 14,300 or close to one-third of the total, compared to only one-fifth in the industry, were in maintenance of

equipment and stores jobs. In the maintenance of way division the respective proportions on the 6 roads and the industry as a whole were 2.5 and 1.1 percent, and in transportation (other than yard and train and engine) 13.8 and 7.4 percent.

Extreme variations both in the proportion and the occupational distribution of the female personnel were found between these systems. On one, for example, only 5.8 percent of the employees were women, and less than 20 of every hundred were in non-clerical occupations. On another 13.6 percent were women and more than 60 of every hundred were in industrial jobs. The proportion of women in the non-clerical force ranged from 1.3 to 9.5. In the maintenance of equipment divisions the range was from 3.5 to almost 17 percent; in the maintenance of way from 0.1 to 4.0, and in transportation (other than train engine and yard) from 2.2 to 22 percent.

Additional data obtained indicates that on comparable installations visited women accounted for less than 5 percent of the industrial force on some and for 25 to 30 percent on others.

Occupational Distribution of Total Female Personnel

The industry-wide occupational pattern described in this section shows the distribution of the female personnel of all Class I roads in the 128 standard I.C.C. Classifications as of mid-July 1944. Many of these groups, as had been noted earlier, especially in the maintenance divisions, are very broad in their coverage, their principal common denominator being the degree of skill and the wage rates of the jobs included. Thus, for example, mechanics' helpers of all crafts are grouped in one I.C.C. classification, and the 3 laborers groups cover scores of different jobs. This data therefore gives only the broad outlines of the women's occupational pattern. The more specific information on the actual nature the work they were doing is presented in the section on Job Descriptions, pages .

In midsummer of 1944 women appeared in about two-thirds of the I.C.C. occupational groups. In the maintenance of equipment divisions they were reported in four-fifths of the classifications, but the overwhelming majority were in the least skilled occupations. However, one-fourth were graded as skilled mechanics helpers and small numbers were employed in most of the skilled crafts. In the transportation services on the other hand, about one-third were in occupations that involved considerable responsibility and training, but most of these were of a semi-clerical or semi-administrative character. (See Table — page — for detailed occupational distribution

Maintenance of Way and Structures Occupations

Women were reported in 11 of the 23 occupational groups in this division. However, both in the industry as a whole and on the 6 selected roads over 95 percent were in 3 laborers groups. The balance were employed as construction and building trades helpers; as signalmen or signal maintainers or helpers; as pumping and portable steam equipment operators or helpers, and as carpenters and painters.

Maintenance of Equipment and Stores Occupations

In this division women appeared in all but 5 of the 23 occupational groups, but about two-thirds were in the least skilled classifications. In July, 1944 some 11,000 or 48 percent of the total were classified as laborers, about 6,400, or over one-fourth of the total as coach cleaners, and 5,250, or almost one-fourth as skilled trades helpers. Only about 400 were in skilled occupations but some were reported in almost every crafts. Included among these were women blacksmiths, boilermakers, "carmen" electrical workers, machinists, sheet metal workers; stationary engineers and firemen, oilers, inspectors and foremen of skilled labor. There were also 160 women gang foremen.

Women were in a minority in all groups - including the coach cleaners, where more than half the employees even in 1944 were men. In the laborers groups their proportion ~~xxx~~ ranged from 11 to 20 percent, and in the helpers group they were 6 percent of the total. However, the ratio of helpers in the female maintenance force was approximately the same as in the male force, but two-thirds of the total were on the 6 roads in the Bureau survey, and the largest of these accounted for more than half in this group as well as for two-thirds of the women in skklled grades.

Transportation (other than train engine and yard)

In this division women also appeared in all but 5 of the ~~13,000~~ 23 standard occupational classes, and almost a third filled quite responsible positions. Some 3,800 were telegraphers and telephoners (who handle train orders), accounting for 14 percent of all the employees in these occupations. Some 970, or close to 8 percent, were station agents (small stations), with almost half also performing the duties of telegraphers and telephoners. Other occupations in which large groups of women were employed, in the order of their numerical importance were the various dining and kitchen services - 3,093; the baggage, parcelroom and

station attendants - 1,622; the station warehouse and platform truckers - 1,605; the crossing and bridge flagmen - 672; the laundry workers - 475; the train attendants 183; and common laborers - 146.

Unusual and highly responsible positions in which from 1 to 15 women were reported included: a train dispatcher; assistant general foreman; chief telegraphers, telephoners, or wire chiefs; baggage agents or assistants; and transportation dining room inspectors.

The roads in the Bureau survey employed women in most of the above classifications and their proportion in this division was almost twice as large as in the industry as a whole. There were, however, sharp variations between these ~~[illegible]~~ systems.

Transportation (yard train and engine)

Over 300 of the 370 women in this division were in the train operating services. More than 200 were classified as assistant passenger conductors and ticket collectors (accounting for almost 6 percent of all employees in this group); 67 were road passenger brakemen or flagmen; 19 were yard brakemen or helpers, and 6 were in the yard firemen and helpers classification. Most of the other women in this division were switchtenders, and 3 were listed as outside hostlers helpers.

About half the total in these occupations were employed on the roads in the Bureau survey.

Professional Clerical and General

Some 40,500 women or more than half the total in this division were in the clerks (B and C) classification which includes ticket sellers, but two-thirds of the employees in this group were men. Over 30,000 were in five other occupational groups in which women predominated. These included the office

mechanical device operators, with 7,244 or over 86 percent women; the stenographers and secretaries (A) group with some 2,300, or 62.5 percent women; the stenographers and typists (B) group with 14,656, or almost 85 percent women; and the messengers and "office boys" group with 5,436, or 91.5 percent women.

Smaller groups of women were employed in various supervisory and other occupations involving considerable responsibility or training. Among these were: some 570 women chief clerks of minor departments; 64 chief clerks of major departments; over 240 professional and subprofessional assistants; close to 200 ticket agents and assistants; over 140 traffic and various other agents and inspectors, and over 1,240 clerks (A) and clerical specialists.

Approximately 4 percent of the women in this division were in custodial and other non-clerical jobs.

In the Executive, Officials and Staff Assistants group only 18 of the more than 4,500 persons were women.

The wide dispersion of the wartime female personnel in railroad maintenance operations is more clearly indicated in the section that follows, where the type of work that women were actually doing on the roads visited is described.

JOB DESCRIPTIONS

The operations on the installations visited included the whole range of activities involved in keeping rolling-stock, the track systems and other facilities and equipment in condition, and women were employed in practically every subdivision of maintenance work. They were on heavy as well as light track, yard, and structures maintenance jobs; They performed a great variety of production and non-production industrial operations in the shops where locomotives and cars were repaired and rebuilt. They worked in the roundhouses where locomotives are checked, serviced and given light repairs between runs.

They cleaned, inspected, lubricated and helped on light repairs of coaches and freight cars in the railroad car yards, and worked on numerous custodial, cleaning and other unskilled jobs in powerhouses, stations, on trains, at terminals, in the stores and other sections where maintenance work was performed.

The descriptions that follow are limited almost entirely as the observations, were to women's work in the maintenance divisions.

Maintenance of Way and Structures Jobs

There are few occupations that would normally be considered less suitable for women than railroad track work. Much of it, as is well known, is heavy, rough, requires exposure to all types of weather, is frequently performed some distance from habitable buildings and communities, and in locations where inadequate or no personal facilities are available.

There is, however, some light track, and other maintenance work in the railroad yards, and near terminals and stations which, while not among the most desirable occupations, is not too heavy for women. 1/

Before the war women were generally excluded from this branch of railroad work, and most of the roads visited employed few in maintenance of way jobs, but in 1944 5 had a total of ____ in this division, and only 2 of these had more than 25 women each. The largest road, however, had several hundred ~~classified~~ women as section and gang laborers.

For the most part these women worked in or near the yards and stations, and were doing relatively light, track dressing, and cleaning work. On some roads however, they also worked in outlying sections, and some were on heavy rail-laying and other "pick-and-shovel" jobs.

1/ In World War I, after the initial employment of women on track maintenance jobs, the U. S. Railroad Administration, upon the recommendation of its women' section, ordered that those so employed should be transferred to other work. The principal reasons given was that some of this work was too heavy and the surrounding unsuitable for women.

Those doing light work cleaned tracks at or near terminals, swept around the yards, stations, and other buildings, cut brush and weeds along the right away, cleaned switches, cleaned and filled switch lamps, shoveled snow from platforms, sidewalks and switches, worked as crossing watchmen, and performed other light cleaning tasks.

Somewhat rougher and heavier work included: loading and unloading crushed stone or other balast; tamping ties by packing balast under and around ties with picks; tightening track bolts and spikes, and leveling out roadbeds.

On two roads women were employed on much heavier work as well. On one, women who worked in gangs of 8 or 9 (including two men) were laying rails that weighed about 1000 pounds each; drove spikes and bored holes with a hand machine in rails and angle bars; lifted rails and ties on to trailers, and lifted handcars on which they rode to and from work on and off the tracks. (All heavy lifting was done by the entire gang.)

On the other road, it was reported that in the course of six months, a gang of 25 women raised 7 miles of passing siding, and one mile of yard track, helped lay two miles of 100 pound rails, installed 3,000 bolts, leveled stone balast on 8 miles of track (with only the spiking done by men, and loaded and unloaded all the materials and tools used in this work.

Only Negro women were reported on the heavy track replacement jobs, but white as well as Negro and Mexican women were doing the less arduous maintenance of way work. Most of those seen, were robust types but this was not always the case. (On one road, for example, the woman who was assistant foreman on a track gang, bore closer resemblence to a fifth avenue model than to the popular conception of a section foreman. See picture p.) .

Women generally worked under the direction of men foremen, although some were the assistant foremen.

Those who worked in outlying sections were within daily commuting distance from their home station.

Only a few women were seen on more skilled maintenance occupations. These included a few painters and helpers who worked only around building; signal maintainers helpers, who wound armatures and performed other semi-skilled work in a signal repair shop; a carpenter, who did mostly clerical work; plumbers and other helpers who were running erands and doing mostly unskilled work.

On one installation women operated the "Jerry" machine which is part of the district telegraph and fire alarm system. These women received reports at stated intervals from watchmen and policemen indicating fires or any other trouble along the right away, or giving the all-clear signal, and relayed these reports to the proper authorities.

Maintenance of Equipment and Stores Jobs

Before the war, the installations visited employed a small number of women in maintenance of equipment work and restricted them largely to the usual car cleaning, custodial, and similar unskilled tasks. But they virtually barred them from production and equipment servicing jobs in the shops, roundhouses, and yards. In 1943 and 1944, however, women on these roads filled a great variety of production and servicing jobs in every branch of maintenance operations, and their work ranged all the way from unskilled window-washing, engine-wiping, and grease-mixing jobs to highly responsible inspection and skilled production operations.

Women were found working in practically every type of shop on production as well as non-production industrial jobs. They were employed in foundries, in tanks, boiler, blacksmith, erecting, electric Diesel Engine and other machine shops where heavy metal parts for locomotives and cars were manufactured and repaired, as well as in the upholstery, carpenter, cabinet, paint and other shops where lighter repair and renovation work on cars was performed. Some also assisted on light repairs in the yards and roundhouses.

A considerable number of those in the shops were helpers to skilled mechanics in every craft. There were women blacksmiths' and boilermakers' helpers as well as helpers to "carmen", carpenters, painters, electrical workers, machinists, welders, coppersmiths, tinsmiths, pipefitters, welders and upholsterers.

Some of these women helpers worked more or less independently on the lighter machine and other production operations, others (the majority) were assisting male mechanics and were under the continuous direction and supervision of these skilled workers.

A considerable number of the helpers, as well as women in laborers classifications, were doing unskilled work such as: bringing tools and parts to mechanics; cleaning rolling stock, parts, tools, work-benches and shops, sorting and cleaning scrap, and performing numerous other essential but completely unskilled tasks.

Most of the installations had only a few or no women on skilled production jobs, but work. On the one road where an appreciable number on skilled maintenance work, they were not apparently all-round mechanics in their crafts. However Since this was the only road that found it practicable to use women on skilled production jobs, the nature of the work these women were doing will be described separately in this section.

Semi-Skilled and Unskilled Production Work

Women helpers who were on machine production jobs operated elatric drills, radial drills, drill presses, electric grinders, various types of lathes, pipe-cutting and shaping machines, bolt cutting and threading machines; metal cutting shears, magnaflux machines, do-all and other electric saws, and assited skilled mechanics on numerous other machine production operations.

In a number of balcksmith, forge, boiler and tank shops they operated various types and sizes of steam hammers , (up to 3600 pounds in weight) and formidable steam presses(up to 150 ton in weight) used for forging metal part fof locomotives and cars. 1/ Other women in these shops held dies and sledges under hammers, swung sledge hammers that weighed 4 to 10½ pound, were shearing and putting welding compounds on metal materials, and performed many other production operations.

In some of the abovementioned and other metal working shops, women operated forges/ heated picks, rivets and bolts and passed them to mechanics; helped insulate steam pipes; helped machinists on switch points, helped make springs; ground rough edges off castings with pnuematic grinders; helped riveters with small rivets; repaired, renovated and produced spring pad lubricators; worked on traction motors; assited pipefitters and coppersmith clean and wash the locomotive boilers and pipes; assited men on heavy wheel production jobs; Cleaned and painted axles, journals seats and wheels (On one installtion an all-woman crew was employed in the spring-pad lubricating shop on production jobs, and in one shop all the wheel painting was done by women.)

In one erecting shop women who assited on reassembling operations installed burners, plug valves and blow-off cocks; helped with the wheel shoes, wedges and frame work; washed out plugs and brackets, scraped frames, pipes, fireboxes, cylinders, and door lubricators; checked blue prints, kept book lined up and worked at tool room attendant.

1/ (See next page for foot note.

Footnote for page 23

1/ These are not arduous jobs. The women sit most of time and the power driven controls are easy to operate. Some foremen estimate that it took about a month to train a woman to become a good steam hammer operator

In some of the electric and Diesel Engine shops Women did underneath and inside inspection of cabs, tested controls in cabs, inspected airbrakes, scraped, painted and flushed batteries, polished fuses, inspected underneath cars for loose bolts, and performed a variety of unskilled tasks

In two wheel shops women were found working both on light and heavy production jobs. In one they cleaned axles and journals and painted all wheels. In the other a number assited men on heavy wheel and axle production operations. With the aid of an electric hoist some of these women picked up heavy axles (750 pounds in weight) and transfered them to a burnishing machine where they smoothed the axle ends with a burnishing wheel. Others who worked at the wheel press marked the center of the axles, and helped push the new wheels on it, operated the air jacks, and helped roll the finished wheels out of the shops (wheels weighed up to 2500 pounds). In the yard of this road women also hlped remove and put on these heavy freight-car wheels. (It was reported that 2 women and 3 men working at the wheel press were doing the same work as 5 men did previously.)

Women helpers and laborers who worked in the car and car shops and yards performed numerous lighter operations (in addition to some of those described above) On most installations they scraped the interior of cars, and washed and cleaned ceilings, walls, windows and fixtrs before and after painting: in some of the truck and passenger shops they performed light repairs. In the upholstery shops they glazed, dry-cleaned sewed and nailed coach seat covers, made shades for car and cab windows, and in some cases the heavy curtains that go between car platforms. Some In the passenger car shops some stripped dining car equipment, inspected and repaired air brakes;

Scraped and cleaned car frames fro painting, putties outside of cars, did brush and spray painting; respired parts of equipment and machinesp put protective oil on disassembled equipment; sorted metal scrap and cleaned it in hot oil; did the lye vat cleaning ~~and~~ did bench cleaning of glass and small parts; in one freight car shop women also hlped on a Cincinnati press brake, and in this as well as other shops they performed a great variety of other semi-skilled and unskilled tasks.

In most shops and yards women lubricated rolling stock, made lubricating rolls and checked, packed and oiled journal boxes. One of the most skilled jobs was performed by 2 women oilers in a Locomotive and Crane repair shop. These women were responsible for lubricating 60 different pieces of equipment. They kept involved records of servicing; called in the equipment whenever the records indicated that any piece needed oiling; and lubricated completely each unit without any supervision. The foreman in this shop claimed that these women were able to do all this work after 3 months training, and that they were as dependable as any man previously employed.

Both in the car and Locomotive repair shops women worked as tool-room attendants, generally handling the lighter supplies.

Scraped and cleaned car frames, for painting, puttied outside of cars did brush and spray painting; repaired parts of equipment and machinery put protective oil on disassembled equipment; sorted metal scrap and cleaned it in hot oil; did the lye vat cleaning; did bench cleaning of glass and small parts; In one freight-car shop women also helped on a cincinnati press brake, and in this as well as other shops they performed a great variety of semi-skilled and unskilled tasks.

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Both in the car and locmotive shops some of the tool room attendats were women, and they generally handled the lighter supplies.

The endless variety of other tasks, requiring little or no skill, that women were doing included: Chipping caked dirt from locmotives and cars; steam-cleaning moveable parts of locmotives with powerful hose spray; cleaning air brakes, bearings for journal boxes, gaskets , valves and other small parts; painting steam pipes, and car windows; mixing asbestos and placing it in molds (with bare hands); Disassembling and sorting old hardware , lighting fires under locmotive boilers; pouring sand into sandboxes on top of engine boilers; holding stencils for stencilling markings on cars; washing paint brushes pails and stencils; cleaning shops, roundhouses; poorhouses; work benches; machines and tools; carting supplies in wheel barrows; putting oil in motors ; filling radiators; tagging locmotive parts when enginves were disassembled And helping on numerous other operations.

All roads had women turntable operators, and on a number they also operated the transfer tables on which locmotives and cars were moved in and out of the shops or to different tracks.

Women's Skilled Production jobs
railroad

The normal requirements for admission to skilled maintenance occupations is a 3 to 5 year apprenticeship in the course of which every phase of the work involved in a craft is learned. However, due to critical shortages of skilled workers during the war, these requirements were gradually realxed, until helpers with as little as one year experience could be admitted on a duration basis to skilled jobs. On some installations it was found that -----

(continue paragraph next page)

male employees were generally advanced to such work under these modified provisions. Women, however, were in effect excluded from skilled operations on most roads, although in the railroad shops, as in other heavy metal working establishments, there were some skilled operations that are not too heavy for them.

The descriptions of women's skilled work that follow are based primarily on the information secured from one road which had a substantial number in skilled maintenance occupations. While the descriptions do not cover all the work the women were doing, they do indicate the type of operations on which it was found practicable to use them.

It should however again be noted that these women were not apparently all-around mechanics in their respective crafts. But this was doubtless also true of many men admitted to skilled occupations during the war.

Boilermakers: Two women reported in this classification were doing primarily electric welding of locomotive boilers, tubes and fireboxes.

Carmen: The majority of about 50 women who were in this classification were employed on freight-car repair work. They trimmed within cars, did riviting and grinding, repaired air-brakes, and did such other work as fixing running boards and floors. Several who were listed as carmen-welders worked in a steel car shop and did electrical welding of castings at furnace.

Car inspectors: About two-thirds of more than 50 car-inspectors did general freight-car inspection (except closing of car doors, hopper and similar heavy work). One-third were doing general inspection of passenger cars. Some inspected only air-brakes. Some also repaired air-brakes and made other light running repairs.

Electricians: The majority of more than 70 women in this classification were in one shop where they wound armatures, operated cranes, and charged batteries. Other women did regular cab-signal testing and repairing in a running

repair section, inspected electrical equipment on incoming steam locomotives; connected and disconnected motors and transformers; inspected motors, motor generators, switch groups, transformers, lights and pantegraphs in a car shop. Some were drilling and placing freight cars, and others did electrical bench work.

Machinists: The work performed by about 100 machinists included: light bench work and various machine production operations. These women operated milling, slotting, borring, travellog and waganflux cutting machines; engine, turret and other lathes; a radial control press, drill presses and shapers. Some of these female machinists did undercutting of commutators and magantic testing of axles, some made repairs on steam-heat connectors, air-brakes, and brake cylinders, reservors, oxygen and acetylene equipment. One was a bolt inspector in an erecting shop.

Painters: A number of women employed in this classifications did spray painting and rough brush work.

Pipefitters: Did only light work such as repairing leaks and fitting up pipes.

Sheet metal workers and tinsmiths: Made up forms and did various light tinsmithing work.

Upholsterers: Were employed mostly on power machine sewing jobs, and were making coach seat covers and curtains for cars. (This is the only skilled occupation in which a few women were employed before the war).

Welders: Did mostly maganflux testing of locomotive parts.

Crane Operators: Women crane operators were employed in a number of shops. In one erecting shop 2 women directed 15-ton overhead cranes used on locomotive repair work. (Some women also operated cranes at piers, loading and unloading cars.)

Locomotive Servicing or Roundhouse Work

The roundhouses, or enginehouses, have been aptly described as the "the stable of the Iron Horse". For here locomotives are inspected, cleaned, lubricated, given light repairs between runs, and prepared for their next run. Some of this engine "grooming" work is light enough for women, but much of it is grimy, and the surroundings are rough. In peacetime only men generally worked in the roundhouses. At the time of the survey, however, roads employed women on engine cleaning and servicing work, as turntable operators, and in some cases on light repairs.

Most of these women were doing unskilled work. They cleaned locomotive cabs, windows and headlights, wiped engine jackets (some climbing on top of locomotive), and cylinders, filled oil-tank boxes, lanterns, and rod cups, worked as sandhouse attendants (climbing ladders and filling sandboxes on locomotive boiler); dispensed oil, and did such other simple work as filling small cartons with chemicals used in boilers for keeping water from boiling over.

On ~~some roads~~ Some women they also lubricated and clean engines. On some ~~roads~~ they checked the water in the boilers by testing and recording results; lit fires under the engine boilers to start up steam; handled water hose for filling the tenders (in which fuel water and oil for locomotives are carried); cleaned locomotive main rods and side rods for wagnaflux testing, and packed cellars.

On a number of installations women worked as "engine supply men" and were responsible for checking and supplying each locomotive with a complete set of tools and other equipment that engines must have before they are taken out on a run. This was rather responsible work, since the equipment for each type of engine differed somewhat, and the women had to see that every locomotive was properly supplied before it left the roundhouse. In some roundhouses women also assisted in running repairs, and in one they helped set tires, fit driving boxes, and assisted in laying off shoes and wedges. All 6 systems employed women as turntable operators in the roundhouses.

Car Cleaning and Servicing Work

All cars are cleaned and serviced between runs in the car yards as well as at main stations en route. This work involves not only sweeping, cleaning, and washing floors, seats and windows, but includes also thorough overhauling of the interior and exterior of cars, as well as the inspection and oiling of journal boxes, the checking and replacement of electrical and other equipment, the provision of ice, linen and other supplies needed in transit.

Car-cleaning is one of the industrial occupations in which women were employed before the war. However, men always predominated in this work, and even in the summer of 1944 more than half the "coach cleaners" in the industry were men. However, on most of the roads in the survey the majority of the workers in this classification were women. In addition, many women laborers and some of the helpers who assisted on repair and renovation of cars (as previously described) were doing essentially car cleaning work.

Women employed as coach cleaners, did both inside and outside cleaning on most installation. The inside work included washing car walls, ceilings, windows and fixtures; dry-cleaning and vaccuming upholstery; sweeping and mopping floors and thoroughly recondition the interior of cars. The outside work consisted of washing cars first by hose with a special solution, then scrubbing them thoroughly with long-handled stiff brushes, and finally washing them with clear water, and wiping off windows. On some installations women did the entire outside job. On others men did the hose washing, and women followed up with the brush scrubbing.

Women also serviced cars with ice for air condition and drinking countains, supplied linen and other equipment needed in transit.

Women laborers cleaned freight cars, and cleaned and supplied cabooses. This work includes washing caboose floors and ceilings, and supplying them with coal, ice, water and flagging equipment and firing caboose stoves. Helpers and

laborers dhecked packed and oiled journal boxes.

Coach cleaners who had been advanced to electrician helpers, checked air-condition equipment, light fixtures, plugs and bell systems.

Stores Jobs

In the stores sections women were doing largely unskilled work, some of an industrial and a semi-clerical nature. Some kept storerooms and stock in order, issued supplies, delivered materials to and from cars to cabooses, to roundshouses and other sections, others were loading, unloading and stacking lumber, sorting and cutting iron scrap; dispensing oil, cleaning lanterns, filling grease guns. On one installation a woman who worked as assistant to receiving clerks, checked materials in and out of freight cars. Another who was assistant to a sectional storekeeper, handled only the lighter supplies - such as bolts, nuts, washers, etc., and a third who was a chipping assistant, was doing semi-clerical worker.

Miscellaneous Jobs

On all roads women were commonly employed as matrons, janitresses, messengers, cleaners, sweepers, laundry workers, and similar "housekeeping" jobs.

Very little information was secured on the securities of those in industrial supervisory jobs, but some were employed as foremen and assistant foremen. On one installation, for example, a Negro woman who was considered exceptionally capable and was well liked, was a labor foreman and had both a man and woman assistant. On this installatinn there were also 15 head women in each yard supervising 12 women. This road also had a Mexican women classified as a labor foreman, but she was actually a counselor for Mexican workers and did not supervise their work.

A number of installations also employed women yard clerks, and in other industrial clerical and semi-clerical positions normally filled by men . These included women train-crew callers and dispatchers, car checkers, clerks who made up interchanges between roads and took car orders from different roads and distributed them to the yards, and other clerical workers whose jobs involved considerable responsibility.

Incidental information on the work of women in the transportation occupations, secured on one large road indicated that:

1. None of the women in the telegrapher, telephoner and towermen classification were towermen. (However it is known that some women towermen were employed on another road).

2. Those in the "caller's loaders, sealers, scalers..." classification were only callers.

3. Women baggage and parcel room attendants checked baggage, handled identification tags, but did no heavy lifting.

4. Women train attendants were mostly trained nurses.

Conclusions

The overwhelming majority of women both in the helpers and laborers classifications were doing unskilled work, or were on jobs that required little training or skill. Sharp variations were found in the employment practices of different roads. Some restricted women entirely to the unusal cleaning and personnel service jobs, while on others they were found in practically every type of shop on a great variety of machine and other new production and equipment servicing jobs.

For the most part, the work women were doing did not involve too heavy weight lifting or other excessive physical strains, although many jobs were dirty, grimy and rough. On all installations, however, there were many suitable jobs either unfilled or filled by men on which women could have been used to ease the wartime manpower shortages. In some cases it was found that such jobs were

mad coach cleaning was wet work

filled by old or handicapped male employees whose seniority entitled them to available light work, and whose general knowledge of railroad operations was of definite value even on relatively unskilled jobs. Other reported factors that limited the employment of women on suitable work included: objections from male employees and their wives(!); prejudices against women on the part of male supervisors; failure to modify antiquated hiring and other personnel practices to facilitate the entrance of women into industrial work; and, of course, labor shortages and availability of better paying jobs in other industries. 1/

One road, for example, reported that a decision was made against employing any more women flagmen because "too many letters came in from flagmen and their wives objecting...." On another a woman supervisor stated that prejudice against women among male supervisory personnel was partly responsible for the high turnover rate among women. On a third it was reported that men employed in the shops voted against admitting women to certain light skilled jobs, although union officials favored their employment on such work. On one of the largest roads, that was trying desperately to increase its female force, few or no adjustments had been made in antiquated hiring procedures that accounted for the loss of many prospective employees.

1/ The War Manpower Commission in one of its Labor Market Information industry series stated in 1944 that "Non-operating employees constituting the great majority of railroad workers, earn less than workers in comparable occupations in other industries. Skilled railway and shop craftsmen earn less than employees with the same skills in metal working plants; and track laborers start at 46 to 55 cents an hour, far below the entrance rate for other industries..."

1/ Practically all railroad collective bargaining agreements have a "faithful service" clause which provides that old or partially incapacitated workers should be given preference in the assignment of light jobs. These clauses generally specify that "Employees who have given long and faithful service in the employe of the company, and who become unable to handle heavy work to advantage, shall be given preference in the assignment of such light work in their line as can be arranged for and which they are able to handle."

ALPHABETIC LIST OF OCCUPATIONS IN WHICH WOMEN WERE EMPLOYED ON SIX SELECTED ROADS 1/

Occupation

Attendant
- Baggage room
- Engine supply house
- Grease room
- Linen room
- Office
- Oil house
- Sand house
- Stores
- Tool room

Cashier
Checker
- Cars
- Commissary supplies
- Stores
- Yard

Claim agent, freight
Cleaner
- Coach
- Engine
- Freight cars
- Shops roundhouses, powerhouses, (laborer)

Clerical Workers
- Billing Clerk
- Car record Clerk
- Chief Clerk (minor department)
- Chief Clerk (major department)
- Chief, Pass Bureau
- Clerical specialists
- District Passenger Office Clerk
- File Clerks
- Information Bureau clerk
- Interchange Clerk
- Mechanical Office Device operator
- Repair records clerk
- Secretary
- Statistician
- Stenographer
- Tariff distributor
- Telephone Switchboard operator
- Ticket clerk
- Timekeeper
- Tonnage clerk
- Transportation clerk
- Yard clerk

Occupation

Cook (restaurant, section gang car)
Counselor (for Mexican Nationals)
Crew Caller
Crew Dispatcher
Crossing Flagman
Crossing Watchman
Draftsman
Engine Supplyman
Engine Wiper
Engine Watcher
Firelighter
Gang Foreman(coach yard, skilled labor
Gang Foreman(Assistant (coahh yard, trac

Helpers
- Blacksmith
- Boilermaker
- Carman
- Car oiler
- Carpenter
- Coppersmith
- Counterman (stores)
- Electrician
- Machinist
- Molder
- Painter
- Pattermaker
- Pipe Fitter
- Plater
- Plumber
- Portable Steam Equipment
- Signalman
- Upholsterer

Ice Bunker--for air conditions
Janitor
Journal Box packer and oiler
Kitchen Workers

1/ This list included only occupations reported on installations visited by Bureau agents. Since the survey was restricted primarily to maintenance,operations; it contains only a very limited coverage of clerical and trapsportation occupations.

Occupation
Laborer
Air Room (shop)
Automatic Control Equipment Shop
Boiler shop
Erecting shop
Extra gang (track and roadway)
Locomotive shop
Machine shop
Maintenance of way (other than track and roadway)
Passenger car repair shop
Powerhouse
Roundhouse
Section (track and roadway)
Sheet metal shop
Spring shop
Station warehouse and platform
Stores
Tank shop
Wheel shop
Yard
Laundry workers
Lead Laborers
Matron
Messenger
Oiler (cars, locomotive, other equipment and parts)
Operator
Bolt threading machine
Bolt cutting machine
Borring machine
Crane (shop-overhead, pier loading)
Crimping rail anchor
Drill (press, radial, others)
Grinding machine
Lathes (turret, burnishing, engine, others)
Magnaflux machine
Milling machine
Motor vehicles
Paintsspray gun
Pipe-cutting machine
Punch press
Radial Control press
Saw (do-all)
Steam Hammer
Sewing machine
Shaper
Sheet metal cutting shears
Slotter machine
Transfer table
Turntable
Travelog cutting machine
Passenger Traffic representative
Professional and subprofessional Assistant:
Rivet bucker, heater
Rodman
Secretary
Secret service operative
Sectional storekeeper assistant
Skilled Mechanics
Boilermaker
Carman
Carpenter
Inspector (Freight and Passengercar, air brakes)
Electrical worker
Machinists
Painters (rolling stock buildings)
Pipefitters
Sheet-metal worker
Tinsmith
Upholsterer
Welder
Sectional storekeeper
Sorter (freight department)
Sorter scrap iron
Station agent
Superintendent's asst. in charge of student telegraphy program
Supervisor, Women's (District)
Supervisor (Reservation Bureau)
Sweeper
Telegrapher
Telegrapher, student
Ticket agent
Ticket agent learner
Ticket Puncher, gateman
Tractor driver
Waitress

POST WAR EMPLOYMENT OPPORTUNITIES

The railroads will doubtless reduce their female force after the war, but a number of current factors, as well as development after World War I indicate that the cut may not be very sharp in the immediate post war period. Although long range trends do not indicate many employment opportunities for women in railroad industrial operations, they seem to point to an increase in customary occupations as compared to prewar levels. But the determining factor in current as well as long-range trends will, of course, be the over-all level of employment on the railroads and in other branches of the nation's economy.

In this repsect the immediate outlook on the railroads is very favorable. This industry will not have any "reconversion" problem. It has a huge back-log of maintenance work which can begin as soon as materials are available. This together with the demobilization and industrial transportation requirements will keep employment on the railroads high for some time after the war.

While this post-war level is not likely to be high enough to absorb both the wartime force and the returning veterans, there are a number of factors that should enable a considerable number of women in the maintenance divisions to hold on to their jobs. 1/

1. Many have the same seniority protection as men, and a considerable number have greater seniority than their civilian male competitors who entered the industry during the war.

2. A large proportion are on unskilled low paying jobs, which are not likely to be claimed on a seniority basis unless prolonged and serious unemployment develops.

3. Many of the younger veterans who were in low paid jobs will probably not return to the industry, since normal upgrading and promotion on the railroads is very slow.

1/ The War Manpower Commission estimates at the beginning of 1944 indicated that over 300,000 railroad employees had entered the armed forces.

Some cuts in the female force during the immediate post-war period, however, are indicated in the findings made on reporting roads, although the ex extent could not be estimated! A number of cases were reported, for example, where women were removed from roundhouse and maintenance of way jobs, and this substitution will doubtless be excellerated; accelerated? the position of women on actual production jobs in the shops seemed relatively insecure. A large proportion of these women were employed on a road where all women hired during the war were classified as temporary employees; in most other cases actual production operations were performed largely by women "helpers," "and since rates in this classification are relatively high, such jobs are much more likely to be claimed by men on a seniority basis; valuntary quits among women on heavy and rough jobs have been considerable and may be expected to continue; And an unknown proportion will of course loose their jobs because of short seniority on the employing roads.

Employment trends following World War I show that although very sharp reductions were made in female force of some divisions, their proportion in non-clerical occupations remained relatively high for some time after the war. Because these developments may throw some light on possible trends in the present post-war period, and because they illustrate how closely womens opportunities in this industry are linked to the over-all employment levels, they are briefly summarized here.

In the year following the 1918 armistice a 20 percent cut was made in the railroad female personnel, but in 1920 when total railroad employment mounted above the 2 million mark 10,000 women were again added to the force. Thus two years after the war, the railroad female personnel was only 10 percent below the wartime peak, and the average number of women workers in these two peacetime years was actually 10,000 above the 1918 average. By 1926, the total railroad force was cut by a quarter of a

million and the female force by about one-third or to 61,000. In 1930, when railroad employment dropped to about 1½ million, 55,000 women remained in the industry. By 1940 when employment dropped to 1,100,000 only about 36,000 women were left. 1/

While the total decreased in this period was considerable, it should be noted that in the spring of 1926, more than 7 years after the armstice, there were almost twice as many women on the roads as in January 1917 (estimated at 31,400 by U. S. Railroad Administration); and even in 1940 their proportion in the total force was twice the pre-war level.

As the female personnel contracted women gradually disappeared from the customary male occupations, Although their proportions in the usual clerical and housekeeping jobs remained consistently above prewar levels. In 1920 for example, about one-third of the 90,000 women were in non-clerical jobs; by 1926, only about 10,000 or one-sixth of the total remained in such occupations, and by 1942 less than 6,000 or one-seventh were in non-clerical jobs.

The extent to which development in the current post war period will follow the above described pattern, cannot be accurately determined at this writing. But even if employment of women should continue at a fairly high level for some time after the war, a future contraction in the railroad labor force seem inevitable, and women will of course be among the first to feel the effects of any substantial reduction. Factors indicating this development include: growing competition from other forms of transportation; continuing technological and other labor saving devices, and an increasing trend toward locating industries as near consuming markets as possible.

1/ 1918, 1919, 1920, and 1926 figures are for Class I steam roads only, the 1930 and 1940 figures are based on U. S. Census reports, and include all workers claiming railroad employment.

WORKING CONDITIONS

Employment conditions on the railroads are almost universally governed by the provisions of collective bargaining contracts, and on most reporting systems the basic employment standards specified in the agreements covering maintenance and clerical workers applied uniformally to men and women. 1/ This reflected the policy of the respective national railroad unions, who early in 1943 recommended to their subordinate units not to make any agreement that would allow lower standards for new employees--men or women. 2/

It should be noted, however, that this "equality" standard had negative as well as positive aspects. While it gave women the same employment standards as men, it also generally deprived them of any special consideration in such matters as choice of shifts or most suitable jobs.

In addition, certain forms of sex discrimination were reported--which were not technically violations of standard contractual rules.

1/ No adequate data was obtained on contracts covering transportation employees.

2/ Railway Employees Department, American Federation of Labor Circular, No. 1177, February 19, 1943.

Seniority Rights

Among the most valued employment standards of railroads workers is their seniority system. Seniority, or length of service is the basic factor in determining the order of promotion, upgrading, transfer, layoffs, and rehiring, as well as the right to preferred jobs, shifts or runs, on all railroads. This seniority system had its origin on some raods at the beginning of the railroad era, and reached universal adoption with the unionization of the industry. To the workers, it is a guarantee agains discrimination and favoritism; to the industry it assures a large corps of experienced workers, thoroughly conversant with railroad rules who are essential to safe operations. 1/

Women, as well as men, have benefited from seniority on railroads. This is indicated partly, in the U. S. Census data on the age distribution of the industrial population. This date,shows, for example, that even in the 1930-1940 decade when competition from younger workers was very great, the older women in railroads employment were more than able to hold their own. In 1930 only about one-third of the 55,000 women in railroad employment were 35 years or over. This oldest group was twice as large as in 1930. but by 1940 two-thirds of the 36,000 who remained were in this age group and one-third of the total were 45 years or over.

During this war most of the National railroad unions opposed any limitations on the seniority rights of new employees--men or women. In an official circular to their subordinate units these unions recommended early in 1943 that "..No special agreements should be made for new employees."

1/ Most railroad workers begin to accumulate seniority from the day their pay starts. Some of those in laborers classifications, however, do not begin to acquire regular seniority until 60 days after they're employed.

limiting the seniority or any other rights of such employees."

On Most reporting roads it was found that the unions representing maintenance and clerical workers generally enforced this policy. Women were admitted into the maintenance and clerical jobs as permanent employees and had equal protection with men of all the standard seniority rules." They did not however, benefit equally with men from some of the wartime relaxations. The principal form of sex-discrimination found in this respect was the general practice of excluding them from skilled maintenance jobs for which some could have qualified under the relaxed wartime provisions, (although not under the peacetime regulations.)

Another serious form of sex discrimination was found on one road which had a collective bargaining contract with an independent union representing maintenance workers. This road had a wartime agreement under which all the women hired during the war (and men over 45) were classified as temporary employees. But on this road, too, women had equal seniority with men while in service. 1/ The agreement with this union also specified that men could be requested to relinquish light jobs to women, regardless of their normal seniority right to such jobs.

1/ This agreement specified that women employed after a specified date in 1941 "Will be considered temporary employees" and .. "shall acquire and may exercise seniority in accordance with applicable provisions, but shall only retain such seniority during the period of the present national emergency."

Wage Rates

Rates in the railroad industry are based on the job classification, not the sex of workers. This practice dates back to World War I when the United States Railroad Administration issued an order requiring that where women are employed"... their pay, when they do the same class of work, shall be the same as that of men." In peacetime and during the present war this job-rate principle has been preserved under the collective bargaining agreements that are almost universal in the industry.

Aggsements covering labroers, as well as those covering clerical, semi-clerical and custodial employees who are under the jurisdiction of the railway clerks union, contain provisions modeled after the World War I equal pay order, which specify that "...the pay of female employees for the same class of work shall be the same as that of men."

The shop craft union agreements, which cover skilled shop mechanics, their helpers, the apprentices and the coach cleaners, do not generally contain this specific clause, but in these too, all rates are based on skill or craft.

Since the job classifications in this long-organized industry are considerably standardized, and women, in the industrial occupations are not segregated into special occupational groups or departments, there is little likelihood of by-passing this equal pay or job rate-policy by creating special classifications for women.

During the present war the railroad unions have stressed the importance of preserving this job-rate principle in various organizational memoranda. In January, 1943, for example, a circular letter sent out by the Railway Employees Department, (AFL) and bearing the endorcers approval of the Railway Labor Executives' Association recommended to all General

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Chairman and field officers of the unions that where women are employed ..."no lowering of existing standards or differences in rights or compensation should be agreed to. Equal treatment is essential regardless of sex."

No violation of this job-rate policy was found on any of the systems in the Bureau survey. Women in all cases received the same rates as men who predominated in every occupational classification.

Occupational Rates

Since the survey was primarily concerned with the employment of women in maintenance operations comprehensive data were obtained only for those classifications in which the majority were employed--that is: for the maintenance of equipment, and store laborers, helpers and coach cleaners groups. No adequate data was secured on rates of maintenance of way laborers who are among the lowest paid in the industry, but all systems reported that they had no sex-wage differentials in any branch of operations.

Most of the wage data was obtained before the general wage increase of 1944 was granted to non-operating employees. However, since this increase was retroactive to 1943 the rates both before and after the increase will be indicated in this section. The regular hourly increases plus the additional adjustments allowed in the 1 44 wage orger resulted in a total rate increase of:

11	cents	on	hourly	rates	under	47 cents
10	"	"	"	"	of	45 to 57 cents
9	"	"	"	"	"	57 cents or over

Laborers rates on reporting roads ranged from 51 3/4 to 60 cents in 1943 and from 61 3/4 to 70 after the wage increase. One road provided a 3 cent increase after 3 months of service, bringing the maximum in this classification up to 72 cents.

Coach cleaners rates ranged from 55 to 60 cents before and 65 to 69 cents an hour after the increase.

Lead women generally received 5 cents above the going rates.

Rates of skilled mechanics' helpers ranged from 63 to 73 cents before and from 72 to 82 after the increase. One road reported an automatic one cent hourly raise after the first and second year of service, bringing the maximum for women in this classification up to 84 cents in 1944.

On most roads all helpers, regardless of their craft classification or the actual character of their work received the same rate. Only on two roads were a few minor exceptions to this rule reported. More frequent variations were indicated in laborers rates, but the range was extremely narrow, and in no case exceeded 4 cents an hour.

Women in skilled classifications received 95 to 98 cents an hour in 1943 and 9 cents more per hour in 1944.

Among the lowest paid women were the messengers, whose daily rate ranged from $3.68 to $4.58 a day in 1943; matrons, and sweepers who received less than 55 cents an hour and a store attendant whose beginning monthly rate was $60, and the maximum after 3 years of service was $71.

Reported rates for industrial clerical workers ranged from $6.15 to $7.68 per day in 1944.

Wage Advancement:

There is relatively little wage advancement on the basis of length of service in the Railroad Maintenance Divisions. The chief exception to this rule is in the apprentice group, But only a couple of women were classified as apprentices at the time of the survey, and none were indicated in later ICC reports.

The principal form of wage advancement available to women in industrial occupations was through upgrading from laborers to helpers classifications. The rate differential between these two classes on 3 reporting roads ranged from 16 to 19 cents per hour. As is evident from these figures, promotion to a helpers grade represented a substantial daily and weekly wage increase.

Shift-rates

Although in many industries shift differentials are paid even in departments that regularly operate on a three shift basis, this is not the case on the railroads. None of the reporting roads had shift differentials in any departments employing women.

Upgrading

All promotion in the railroad industry, except in some executive supervisory and administrative positions, is based on seniority or length of service. The standard upgrading rule embodied in most collective bargaining contracts provides that: "Promotion will be based on fitness, ability and seniority; fitness and ability being sufficient, seniority will prevail." Under this system qualifying employees with the longest service in specified groups of related occupations or departments in a given area - are the first in line for promotion or upgrading.

On most reporting systems women in the maintenance divisions were generally hired in as laborers and advanced to helpers grades, whenever suitable openings occurred, on an equal seniority basis with men. On some installations such openings were frequent, and it was only a matter of weeks or even days before women were upgraded to helpers. On others suitable openings were infrequent and women remained in laborers classifications for months. On two systems none were reported in the helpers grade. Coach cleaners were hired in as such and promoted to lead women or helpers.

It is significant to note that in the industry as a whole the proportion of helpers in the female maintenance of equipment forcewas as large as in the male force. Another significant point is that upgrading of women to helpers was much more extensive in this than in the last war. In 1918 and 1920, for example, only about 5 percent of the women in maintenance jobs were in this classification, in 1944, on the other hand almost 20% were in this group.

On the three roads in the Bureau survey with the largest number of women in the maintenance of equipment and stores division approximately one-third, one-fourth and one-fifth respectively were in helpers classifications.

Women were, however, generally discriminated against in upgrading to skilled maintenance jobs. It is true that few or none could have qualified for a journeyman's grade under the normal rules which require a 3 to 5 year apprenticehsip of 290 days each. However, management and labor representatives agreed to drastic wartime modification, and under these modified rules helpers with only two or even one years experience could be upgraded for the duration to skilled mechanics work. 1/ On most reporting roads, however, it was found that while men were upgraded under these relaxed provisions, women were generally denied this privilege. Only on one raod were a substantial number upgraded to skilled maintenance jobs. This road however had supplementary contracts under which men agreed to relinquish lighter jobs to women, However, this agreement discriminated against women in another way, although specified that all women hired during the war were temporary employees, and subject to dismissal at any time after the emergency had passed. 2/

Upgrading to gang formen's jobs was proportionately greater than upgrading to skilled mechanics work. Although 3 reporting roads with the smallest number of women employees, had none in this classification, on the other 5 close to 10, 26, and 42 percent respectively of the gang foremen in the shops, yards and roundhouses were women. This is especially noteworthy in view of the fact that a considerable amount of the literature advising railroads on supervision of women placed undue stress on their preference for male supervisors.

1/ Such employees did not have to be all-round mechanics in their craft. If they performed any operation rated as skilled mechanics work, they were classified as skilled. journeymen for the period that they were working and were paid a mechanics rate.

2/ This arrangement was made with an independent union.

Hours

Scheduled and Overtime Hours

The regularly scheduled work hours in reporting ~~hours~~ ranged from 48 to 60 a week. Most installations of 5 systems were on a 6-8-48 weekly schedule. But on the road that ranked second in the ~~size~~ of its female force all the women in the shops had a 56-hour week of four 10-hour and two 8-hour days. Two installations also reported regular schedules of six 10-hour days a week. (Examination of company records of ~~women~~ one showed that in a period of 3 months only nine 60-hour weeks were worked.)

In addition overtime above regularly scheduled hours was reported on several roads. On one, women in the yards worked seven 8-hour days or 56 hours every other week. Another road reported about half the women laborers working 4 to 6 hours and some as much as 12 hours a week above scheduled 48 hours; and one installation operating on a 60-hour basis, reported that many women worked up to 70 hours a week. Overtime from 1 to 2 hours a day was also reported on other installations.

On most roads work above 8-hours a day was optional, and biding for overtime was on a seniority basis. Alltime above 8-hours a day or 48-hours a week; work on Sundays, (except for specific groups); work on a seventh consecutive day and on a number of designated holidays was considered as overtime and was paid at one and a half times the basic rate.

Shifts

Since railroading is a round-the-clock business the 24-hour work day of three 8-hour shifts is customary in many railroad departments. But unlike other industries, the railroads do not have rotation of shifts. The customary practice in this industry is to bid for prefered shifts on a seniority basis. Under this procedure available openings are listed

by occupation and shift and qualifying workers with the longest seniority get first choice.

Reporting roads employed women on all shifts. On installations reporting distribution of the female force by shift, the majority of the women were on the first shift. The total number of women on the second shift was about the same as on the third shift, but on some installations the total on the last "graveyard" shift was larger than on the second. Women on the graveyard shifts worked in the roundhouses, yards and in some shops.

Part-time work

On none of the reporting roads were any women employed on a part-time basis.

Lunch period

The lunch periods for women were the same as for men and generally corresponded to the normal contractual provisions.

In most industrial divisions 20 or 30 minutes was allowed for lunch. Where time for eating was taken out during working hours, the period was 20 minutes. When workers ate on their own time they usually had half-an-hour for lunch. Only one exception to this rule was found on an installation where all shop workers had a paid standards 30 minute lunch period.

The collective bargaining agreements in the industry provided that up to 20 minutes, (in some cases up to 30 minutes) should be allowed for eating during the working hours to designate groups of workers or under conditions requiring continuous presence on the job.

On the roads in the survey it was found that operations were on a three-shift basis, all workers were allowed 20 minutes for lunch during working hours. Some roads where women were only on two shifts, also reported

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20-minute lunch periods.during working hours, in some cases on both shifts.

On one road, where the collective bargaining agreement permitted a paid lunch period up to 30 minutes, only one installation allowed that much time to women in the shops. On the other installations of this system women on 10-hour work-schedules ate on their own time--which stretched their day in the shop to 10½ hours, while those on 8-hour schedules outside the shops ate within the scheduled hours.

Reported lunch time of yard clerks, other industrial clerical and some store employees ranged from one-half to 1 hour.

Rest Periods

Although none of the railroads had modified their standard regulations to provide formal rest periods for women, most reporting installations had two informal 10 to 15-minute rest periods daily for women on industrial jobs. In one case women who were on 1 - our shifts were allowed 3-10-minute periods daily, and on another women in the roundhouses had 2-20-minute rest periods (the women in the roundhouse were on strenuous work and said they needed every minute of rest allowed.) On some installations, however, no regular time for rest was designated and on one it was reported that turntable operators had no relief for lunch or rest.perio

The need for establishing regular rest periods was indicated by conditions that prevailed on some installations of the two largest roads. One of these roads had issued no definite instructions to its administrative personnel on the subject, with the result that some provided for regular rest period while others did not, and on the installations where no time for rest was designated, there was a great deal of argument and, misunderstanding and irritation over this question.

On one installation of the other road, where no formal time for rest was established, considerable dissatisfaction was reported over the amount of irregular time women took out for resting. Management in this instance was considering the establishment of formal rest periods.

TURNOVER AND ABSENTEEISM

Available data on absenteeism and turnover on reporting roads were extremely inadequate. Few Installations had regular records, none had a breakdown on the basis of sex or cause, or separated quits from involuntary and military separations. However, on annumber of installations special computations were made upon request of the bureau agents, and these as well as estimated of supervisory personnel indicated that women in most cases had either as good or better record than men. Overall rates, however, were high.

Turnover

Industry-wide data shows an extremely high rate of turnover on the railroads during the war, but indicates that it was considerably lower in the female than the male personnel. Railroad Retirement Board figures, for the fiscal year, 1942-1943 show, for example about 1 million new entrants in the industry, but a total increase in the labor force of only 120,000 in this period, or a ratio of approximately 8 to 1.

While no sex breakdown in these figures is available other data indicates that the ratio in the female force was probably less than 2 to 1. This estimate is based on the Boards reports which show that about 44,000 women entered employment on Class I Railroads during 1942, and other reports which indicate that in the last 4 months of that year along the female force on these roads increased by a out 23,000.

Saattered data obtained on reporting roads showed a weekly turnover rates in the total labor force ranging from 1 to 12 percent. No sex breakdowns in these figures were obtained.

On reporting roads, supervisory personnel on 3 installations estimated turnover lower among women than men, on a fourth it was stated that "women have been quite steady", and on a fifth, that turnover was higher among women than men.

Scattered statistical data obtained for limited periods did not generally indicate a sex breakdown. It showed, however, the highest termination rates for women coach cleaners and maintenance of way laborers. The lowest rates were reported in passenger can and in other repair shops and amont women flagmen.

On two installations 30 and 40 percent respectively of the women coach cleaners terminated their employment in the course of a month. On two others the termination rate in this group was about 13 and 15 percent per month respectively.

The highest termination rate for shop employees was reported in a locomotive shop where the number of separations (male and female) in the course of a year equalled 50 percent of the total force. That suitability of job was a factor in turnover was indicated by the fact that in the passenger car shop of this same road turnover for women was said to be "small". In a shop of another road where 200 women were employed only one termination was reported in the female force in a period of 3 months. On another installation where several thousand workers were employed in the shops, turnover for men and women was estimated at about 5 percent monthly.

Principal reasons given for high turnover among women coach cleaners was that the work was wet and dirty. Other reasons given for terminations in the female force included: Unsuitable jobs, prejudices of male workers and supervisory personnel, and more attractive wages in competing industries.

On the other hand, on one road where 300 women had been hired for mainteance of way work in the course of a year, only 33 remained at the time of the Bureau visit.

One woman supervisor, for example , thought that high turnover among women on her road was due in part to the fact that foremen discouraged them and she recommended special instruction and training for supervisory personnel to eliminate such attitudes.

The importance of this factor was indicated by results achieved on another road where special steps had been taken to prevent such discrimination. This road informed its male supervisors of the urgent necessity of employing women, before women were hired, and required the supervisors to interview those who seemed dissatisfied with their work, shift them to more suitable work where possible , and make every effort to keep them in service. Very little resentment against women was found in the male force of the installation visited on this road, and turnover was realtively low.

Absenteeism

No regular data on absenteeism were kept on any of the reporting roads, and the persons interviewed were equally divided about the proportion of absences among the sexes. Half said there were more absences among men, the other half believed there were more among women. However, on one road where an actual check was made, and where supervisors generally estimated that men had a better record, their absence rate was actually in many cases as high, or higher than in female force. An extreme example was one coach yard where on the day of the visit 60 percent of the men as against 28 percent of the women were absent.

On a number of roads where special computations were made by Bureau agents for limited periods, total absenteeism rates ranged from 10 to 30 percent in the shops and from 20 to 50 percent among coach cleaners. But these figures reflect to a very large extent turnover rather than absentee, since under the seniority rules, it is not possible to clear very promptly voluntary terminations from the payrolls.

While no records were obtained on absences by group, on most roads the opinion was generally expressed that there had been an excessively high rate among coach cleaners, due to such factors as out-of-door work, wet jobs, and poor lavatory facilities. On installations where no proper work clothing was provided it was impossible for women cleaning coaches to keep dry and colds were prevalent among them.

PERSONNEL POLICIES AND PRACTICES

The Office of Defence Transportation devoted a great deal of attention during the war to Railroad personnel problems, and its division of Transport Personnel made numerous recommendations to the transportation industries on personnel practices that would facilitate the recruitment and retention of women in industrial transportation work. However, on most installations visited by Bureau agents few modifications in old personnel practices were found, and this lack of adaptation hampered the recruitment of women (as well as men) in a tight labor market. 1/

1/ O.D.T. Activities in this field included: (1) A conference with management and labor representatives from all transportation services on "Woman Power in Transportation" in March, 1943. (2) An Institute for Supervisors of Women Workers in transportation, October 12,-14, 1943. (3) A study of railroad work suitable for women issued January, 1944. (4) Memorandum on "Practical Hints to Employers of Women with Special reference to Transportation, October, 1944.

Labor Supply

Most roads reported serious labor shortages, and ~~various~~ numerous openings in their industrial divisions in which more women could be used. While practically all installations were in labor shortage areas a number of other factors were reported as contributing to the limited supply of female workers. These included: complicated hiring procedures, requirements to work on late shifts; wage scales below those paid for comparable work in competing industries; rough character of some jobs; isolated location of some installations and prejudices among male workers, and supervisory personnel against women. 1/

Recruitment

Usually workers for non-operating jobs were drawn from the immediate lacality and from near points along the line. One of the largest roads, however, reported that it recruited both men and women at any point along the line for work anywhere on the system. In these cases workers were furnished transportation by the company, but were not guaranteed a job until after the interview at the point of employment. This practice was considered extremely undesirable for most women by the Bureau agent, who recommended that the road make every effort to employ local women whenever possible.

1/ In two localities difficulties in recruiting workers for the railroads were ascribed partly to relatively low wage rates in this industry. The War Manpower Commission in 1944 also reported that "Non-operating employees, constituting the great majority of railroad workers, earn less than workers in comparable occupations in other industries--skilled railway shop craftsmen earn less than employees with the same skills in metal working plants, and track laborers start at 46 to 55 cents an hour, far below the entrance rate in other industries." Labor Market Information, Industry Series No. 40-1.

The principal recruiting agents and agencies - used by these systems were the older employees, the company employment offices, the Railroad Retirement Board and the U. S. Employment offices. Actual hiring was generally done at the shops needing the workers by the foremen or other personnel employees. Recruiting methods used by company offices included: Newspaper advertising; radio, posters and appeals through church and other community leaders, Advertisements usually asked applicants to report at downtown offices. From these they were sent out to the installations where jobs were open.

Hiring

The hiring procedure, on some installations, was relatively simple. Workers applied at the installation office, were interviewed by the foremen, given a physical examination, and those who met the minimum requirements were hired and assigned to their jobs. On others, however, the hiring process was extremely complicated, and hampered the recruitment of both women and men. The worst conditions, strangely enough were found on a road that reported very serious labor shortages and was trying to make the maximum use of women in industrial operations. This road, however, had made no modifications in its old hiring procedures, which were especially unsuitable for women new in the labor market.

In some large industrial communities this system, for example, required workers to apply first at its downtown employment office. From these, if they had no certificate of availability, they were sent to the Railroad Retirement Board of the U. S. Employment Service to obtain one. When (and if) they returned, they were sent out to the shops for an interview with the foremen. (The shops were frequently on the outskirts of the city and not easily accessible.) If a worker

was hired by the foreman and there was no doctor present on the premises, she had to go back to the city for a physical examination, and if she passed the examination she reported to work. Extremely wide discrepancies between the number of applicants and the number reporting at the shops indicated that many prospective employees were lost in this complicated shuffle.

Some of the employment office on this road were also extremely crowded, and poorly laid out, and few women interviewers were employed.

Recommendation of Bureau agents to facilitate recruitment of women on this road included: 1. A simplified procedure that would make possible the clearance of all hiring prerequisites in one visit. 2. Provisions for transporting workers from downtown offices to the shops. 3. More specific information on the nature of the work involved in jobs offered to women, 4. Use of women interviewers, and better laid out offices as a means of easing the entrance process for women especially those new in the labor market.

Selection

Selection of women on reporting roads was made chiefly on the basis of health and age. In the maintenance division where women were hired mostly for unskilled work, little other selectivity was exercised If an applicant passed her physical examination, and was within the age limit, she was eligible for a job. The final determination, however, was made by the hiring agent, who was usually the foreman, and he generally determined, what work was suitable for the applicant.

With the exception of one installation, medical examinations were used only to determine general fitness, but not the type of work on which a woman should be used. Those who did not pass the standard physical requirements were simply not considered for any work. 1/ The thoroughness of the examinations varied markedly between systems, but in most cases included checking of heart, lungs, distance vision, and blood pressure.

The age limits ranged from 16 to 65 years for women and up to 70 for men. On half the roads the minimum was 18 years and for the more hazardous jobs it was 21. The maximum ranged from 45 to 65. The great majority were in the 25-45 age range. On one of the largest roads where the theoretical maximum was 55 the agent reported that she did not see any women in the shops anywhere near this age. One of the roads that reported a serious shortage of clerical workers, was turning down women applicants over 45 because this was its formal age limit for new clerical employees.

Orientation and Induction

Where women supervisors were present they took new women employees in charge, introduced them to the foremen and other employees, showed them their lockers and restrooms, explained regulations concerning work clothing, safety, lunch and rest periods, and other matters relating to facilities and procedures. In most other cases workers reported directly to their immediate superior, who assigned them to their jobs and gave them the essential information about facilities and other regulations. The adequacy of the workers induction varied with the ability of the person in charge.

1/ In other industries studied by the Women's Bureau during the war, notably the Army supply depots, older women and women with minor physical handicaps were used effectively on the lighter industrial operations in areas where labor shortages were acute, no effort to use such women were reported in any of the railroads - although critical labor shortages were reported by most.

Training

Railroads usually train their workers on the job and normally develop their semi-skilled and skilled force through a slow training process, governed by seniority, in the course of which junior employees learn gradually but thoroughly every phase of the work involved in their occupations or crafts. While this process has been expedited during the war, on-the-job training for new workers remained the prevalent practice in railroad maintenance division.

With one temporary exdeption, all women employed in the maintenance divisions of reporting roads were given only on-the-job training. But off-the-job instructions were provided on a number of roads for women telegraphers, teletype operators, ticket sellers and other clerical workers.

The exception in the maintenance divisions was one road where a woman supervisor had a number of classes for a brief period in which new women were taught the meaning of repair instructions and the names of parts and tools they handled in the course of their work. These instructions, useful to any workers unfamiliar with industrial terminology, were of special value on the railroads which have a language almost of their own. However, even this limited course was discontinued because the supervisor who initiated it had too many other responsibilities.

Since women in the maintenance divisions began usually as coach cleaners or laborers, they needed relatively little training in the actual work processes. They received their instruction from foremen or more experienced workers, and were usually placed with older employees while learning their job. Most of these upgraded to helpers jobs, worked under the continuous supervision and direction of skilled employees.

Some cases were reported where women studied outside working hours on their own initiative, but there was little incentive for this in maintenance divisions, since few skilled jobs were open to women.

In other branches of operations, telegraphy was the most frequently mentioned occupation in which off-the-job training was required or provided. One system reported that it sent its women trainees to a regular school and paid them during the training period which lasted several weeks. Another provided a 6-month training course for telegraphers and reported that upon completion of the course some women were sent to stations where train orders were extremely heavy. On another road a woman, who was assistant superintendent of ~~its~~ the telegraphers department, supervised the training of women telegraphers on company premises, gave them examinations and stayed with them on the job for a time. One road reported that it employed only women who were already trained in commercial telegraphy schools.

Safety, Accidents and Protedtive Clothing

Safety instructions received considerable attention on several reporting installations. One of the largest roads which had a safety department on a system level reported quarterly meetings for supervisors and other key men on safety problems, and weekly or monthly meetings for foremen and workers on company time. Another road, which also reported weekly safety meetings, had a woman member on the safety committee at each point where women were working.

Workers were generally given printed safety regulations upon employment or were instructed by their foremen in the most essential safety rules. One system reported a number of different safety books for the various departments, and a regular periodical dealing with safety matters. On one installation films were used occasionally in safety instructions.

No separate accident figures for women were available, but on most reporting installations it was claimed that the majority of women's accidents were of a minor nature with a large proportion caused by falling on wet or oily surfaces. One one installation where women's accident records were analyzed exactly half were caused by falling or slipping. Inadequate yard lighting facilities at night in locations where women had to cross tracks were reported in a number of cases.

Dermititis was reported as quite a problem for women who washed cars with Oakite solution, and for those on waste reclamation jobs in some installations, but others claimed they had no complaints from workers regarding skin irritations. A number of installations reported that they provided protective salves for workers exposed to dermititis.

On some roads rubber boots, aprons, gloves and goggles were furnished to women coach cleaners, and safety belts to those who wiped down the engine jackets (women engine wipers had to climb up and walk along a very narrow running board and the belt hooked to a rod running along each side of the engine was a protection against falls.)

On ~~some~~ installations, however, foremen did not think such equipment necessary, and on some of these women who helped wash the outside of cars got very wet in the course of their work.

All 6 companies, however, reported furnishing goggles on most operations where they were needed. On one where they were provided on 42 different operations, instructions for wearing them (not always complied with) were given to employees at the time the goggles were issued.

Safety shoes were required by three companies on certain jobs, and recommended by others. Special stamps for such shows were allowed, but only one company took the responsibility for selling them to its employees. Difficulties in securing these shoes were given as reasons for lax requirements and inadequate supply provisions.

Slacks and overalls were required only on one installation, but these as well as headgear were recommended by all companies, and women were generally wearing them.

Since there is considerable steam, oil greases and water about on most jobs in the maintenance division, women were generally glad to cover their heads with bandanas or caps. Wearing of jewelry was universally discouraged and women apparently complied wholeheartedly. On the whole women complied well with safety clothing regulations except for footwear.

Personnel Counselling

Counselling and other personnel matters affecting women received less attention on visited roads that most personnel experts consider desirable. However 3 of the 5 reporting systems had women "supervisors" on their personnel staffs whose principal responsibility was to advise on matters relating to women 's employment, their facilities and other personnel problems.

The two largest roads had 3 women each and the thrid had 1 working in this capacity. These women had jurisdiction over entire divisional areas. Since these railroad divisions in some cases included several industrial installations in a number of communities, some installations were visited by the women supervisors only once in 2 months.

None of the roads reported any other women counselors continuously present on individual installations, although some may have been employed. On some it was found that lead women and women classified as foremen handled personnel problems other than those relating to the job functions. On one road, for example, a Mexican woman foreman assisted Mexican nationals with such problems as housing, transportation and rationing. But few other cases of regular counseling on a local level were reported aside from that given by the division supervisors when they were present at installations.

The functions and duties of most women supervisors were not clearly defined. All reported that they advised and were, or expected to be, consulted on all matters relating to personnel problems of women. Apparently plant supervisors were not informed of the exact functions these women were to have and this in some cases limited considerably their activities and influence.

One woman supervisor stated that she succeeded in establishing a good relationship with departmental supervisors, and was consulted on problems arising in relation to women in these departments. On this road one of the supervisors had authority to hire women when she was at the main office, and assisted with the induction of women when she was present at the installation. One of these supervisors also organized a course of instructions for new industrial women employees, but had to discontinue it due to the fact that she did not personnally have time to keep it going.

The supervisor on another road reported that she was able to visit regularly all the departments where women were employed and kept in close touch with all problems affecting their welfare. The only specific accomplishment she mentioned, however, was the expansion of washroom facilities for women. This Supervisor said, she advised and reported directly to the divisional superintendent.

None of the women supervisors whose background was given had personnel relations training. Some were wives of railroad executives, and therefore had some background and understanding of railroad traditions. Another was formerly a teacher and had child care experience, but was doing very effective work on her personnel job.

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Non-White Employees

No Road was operating without Negro women, and while some installtions had few or none on their force, on others they filled many essential unskilled jbs, and on the largest road they comprised more than 20 perecent of the female personnel.

Many were coach cleaners, and on some installations predominated in this group; a considerable number were on yard, track and roadbed maintenance crews; some worked in roundhouses, cleaning and oiling locomotives , operating roundtables and doing cleaning-up jobs; others were laborers, truckers, dining and kitchen service employees, laundresses, train attendants, janitresses , matrons, and on various other housekeeping and personal service jobs.

Most roads had no women in semi-skilled or skilled industrial occupations, but some were lead women of laborers and cleaners and some were assitant foremen and even foremen of coach cleaners. On one road, for example, a Negro woman, had been foreman of chach cleaners for over a year and had jurisdiction over subforemen, including a man. On the largest road a number of Negrom women had been advanced to skilled mechinics' helpers but on some none were employed in the shops.

Normally the industry employes few Negro women. In 1942, for example, only 4,400 of the 81,400 women who had credited compensation on Class I roads during the year were Negro.(Three-fourth of this total were in laborers, classifications and the majority of the others were cleaners, janitresses and train attendants. Only about 30 were in clerical Jobs) In midsummer of 1943, on the other hand one large road alone reported over 4500 Negrom women employees.

On two installtions visited Mexican women were employed on trckwork and as coach cleaners and another reported using "just about every nationality".

Pregnancy Policies

No uniform or formal policy was found among any of the railroads regarding pregnancy cases. Usually, if at the time of the physical examination it was discovered that the woman was pregnant she was not hired. But she was not asked to reveal this fact. In one system, when the pregnancy of two women became known, they were transferred to lighter work and were told that they could have leaves of absence so that they could return to work. The policy concerning pregnancy is generally worked out on an individual basis, and settled according to the opinion of the supervisor. No doubt, often women in this conditions resign without giving the reason to the company. One agent stated: "Pregnancy does not seem to be a matter of much concern or interest in any division. No worker who is furloughed for a legitimate reason loses his seniority, and this applies to pregnancy....."

Mothers with Children under Sixteen

The four railroads reporting said that no records were kept of the employment of mothers with children under sixteen years of age. It is known, however, that women with children of this age are employed, for one company states that it is difficult to transfer women with children of this age to other shops as might be desirable at time, and one supervisor says she assists the workers who apply to her in finding care for their children.

Union Organization and Affiliation

The railroads are among the most completely unionized industries in the country, and although no closed shop agreements are permitted in the industry between 85 and 90 percent of the workers in the different branches of operation are union members.

On reporting roads all unions claiming jurisdiction over occupations in which women were employed admitted them to membership, although some restricted membership to men only in the past. One large road estimated that between 80 and 95 percent of the women on the various installations were union members.

In most cases women were apparently admitted to unions on the same basis as men. But restrictions were reported against Negro workers, both male and female. In one case it was stated that Negroes were admitted to membership, but were segregated, and in another it was claimed that their voting privileges were restricted. 1/

While no specific information was secured on the membership status of women in two independent unions, it is possible that their membership, like their employment, was limited to the National emergency period.

As has been previously indicated, women in most cases had the same contractual protections as men. But this was not conditional upon union membership. Provisions in collective bargaining contracts applied equally to union and non-union workers. However since grievances were handled through the collective bargaining machinery, there was obvious advantage in holding union membership. The high proportion of union affiliations

1/ The constitutions of a number of railroad unions have provisions that make possible various forms of membership restrictions on the basis of race.

is doubtless also due in part to the prejudice that exists among ... this long organized industry against "no-bills"--that is employees who benefit from collective bargaining but do not contribute to the maintenance of collective baragaining agencies through union membership and dues.

No data was obtained on dues of women workers and very little information was secured about their participation in union activities. Only one case was reported where a woman had been serving on a machine shop committee-- for over a year, and on one installation it was reported that women lost out on an important question affecting their promotion opportunities partly beacuse they did not attend union meetings.

In the management group only one case was found where a woman supervisor participated regularly in labor-management committee meetings.

PERSONNEL FACILITIES

Rest Rooms

Adequate, roomy and well equipped restrooms and lavatories for women were rare in the industrial divisions of the installations visited. In some departments proper provisions were made, but in most cases these facilities were inadequate, poorly planned and poorly equipped.

One installation with 500 women, for example, had only 77 lockers for them. Some restrooms and lavatories were far from the workers and women had to walk blocks to get to them. Some toilets had curtains but no doors. Hot water, lockers, cots, and similar equipment were either inadequate or entirely lacking. Wash bowls, paper towels, mirrors, tables, chairs, drinking fountains were meagerly supplied.

On a number of installations it was reported that these facilities were either in the process of being expanded, or that plans for expansion had been submitted. On some it was stated that the shortage was due to difficulties in obtaining materials. However, the extent of the inadequacies indicated that insufficient attention had been generally given to these basic essentials, and the generally poor conditions, doubtless resulted in poor morale, loss of time, and even loss of workers. One agent commenting on the inadequate restroom and locker provisions on one large road reported that: "The work of women is dirty, wet, and greasy and the inability to change their clothes before going home is a distinct annoyance to them and is a contributing factor to turnover."

Eating Facilities

No company-owned cafeterias or lunch rooms were found in any of the installations. On the whole, little effort has been made on the part of the companies to have in-plant food services. In only two places were concessions operating. These places usually serve milk, candy, ice cream, soft drinks, but no sandwiches. In only one plant, were sandwiches sold. The majority of workers brought their lunches, and those not buying them patronized near-by restaurants and cafeterias.

Only one of the six systems provided lunch rooms for women . At all other places women ate in their rest or change rooms. These quarters are not always clean and seldom sufficiently large. At one engine house, the women complained about flies and asked that screens be put in.

Medical Facilities

All systems had medical departments and medical examinations were given to most workers before they were hired. But medical facilities for servicing plant workers varied greatly between installations. Two reported both doctors and nurses on duty daily; one reported a doctor only, on duty. No night duty was reported for either doctors or nurses. One system reported sending employees injured at night to the "nearest" hospital. Five of the 6 roads reported ambulance service available. First aid facilities on one installation consisted of first aid kits only. There was not even a first aid room, however, an ambulance was available.

The initial medical examination was apparently free in most cases but one company required workers to pay one dollar for the examination.

Two systems reported having group insurance plans covering hospital and medical costs. On one the cost was $1.60 per month on another $1.75.

Transportation

All reporting installations were close to public transportation facilities, and buses and street cars, brought workers within a few blocks or upt to the yards and shops. Need for supplementary company transportation however, was indicated for taking applicants from downtown employment offices to the installations, which were generally some distance from the center of the city. Company transportation for taking women on night shifts to and from their bus or car stops was also considered desirable by Bureau agents. In a number of cases women stated that they had to walk a few blocks from their bus stops to the shops or yards, and that they were timid about crossing this distance alone at night.

As is the customs on the railroads, all installations gave free passes to their employees if they lived in one locality and worked in another. One system reported that when employees were transferred to a new locality, transportation was provided not only for the worker but also for his dependents.

Housing

In most localities, housing has not been a problem. One system reported that in isolated places, housing cars are used for men workers. When requisitioning workers, this company acquainted them with the housing situation and facilities available for workers. Another system reports using box cars on grounds back of a shop for Negro workers. In this instance, the wives were encouraged to work.

Child Care

Although a number of the cities where installations of the railroads are located have well-equipped child-care centers, most of the companies in these cities make no report on child-care problems. Only one woman counselor reports that she refers workers with welfare and child-care problems to local social welfare bureaus. Without reports from the child-care agencies in the cities, it would be difficult to determine whether child care is really a problem among the railroad employees.

In one system, the woman counselor assists women with matters of child care, however, because of her many duties she is only able to assist those who live in the vicinity of her office.

(One supervisor expressed the opinion that child care did not affect absenteeism and turnover.)

NUMBER OF WOMEN EMPLOYED IN MAJOR DIVISIONS OF CLASS I RAILWAYS
IN 1943 and 1944
END OF EACH QUARTER IN 1943 AND 1944

(Mid-month figures)

Major Divisions	1943						1944			
	January		April		July	October	January	April	July	October
	Numb. of Women	Perc. of total women force	Numb of Women	Perc. of total women force	No. of Women					
TOTAL- All Divisions										
I Executives, Officials and Staff Assistants			0.1	17						
II. Professional Clerical and General										
III. Maintenance of Way and Structures										
IV. Maintenance of Equipment and stores										
V. Transportation other than train, engine, and yard										
VI(a) Transportation((Yardmaster, switchtenders and hostlers)										
VI(b) Transportation ((Train and Engine)										

NUMBER AND OCCUPATIONAL DISTRIBUTION OF WOMEN EMPLOYED BY CLASS I RAILWAYS

January, 1943 and July, 1944 1/

(Mid-Month Figures)

Divisions and Occupations	January, 1943		July, 1944		
	Number of Women	Percent of total Employees	Number of Women	Percent of total Employees	Percentage change from Jan. 1943

1/ Data is based on mimeographed reports issued at three-month intervals, since January, 1943, by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission, entitled "Number of Females Employed by Class I Steam Railways" These figures do not include switching and terminal companies.

by Division

ALPHABETICAL LIST OF OCCUPATIONS 1/ THAT WOMEN ARE DOING IN 6 SELECTED RAILROADS

Division 2

Occupation	Professional, clerical, and general	Maintenance of Way and Structures	Maintenance of Equipment and Stores	Transportation (Other than Train, Engine, and Yard)
Attendant				
Baggage room			x	
Engine supply house			x	
Grease room			x	
Linen room				x
Oil house			x	
Sand house			x	
Stores			x	
Tool room			x	
Cashier	x			
Checker				
Car	x			
Commissary supplies				x
Stores	x			
Yard	x			
Claim agent, freight	x			
Cleaner				
Axles and journals			x	
Bearings for journal boxes (buff and grind)			x	
Box cars and yards			x	
Cabooses (includes supplying ice, coal, water, and flagging equipment)			x	
Coach			x	
Engines (wipe engine jackets, clean cab windows, wash tanks, polish bells, wipe cylinder cases, etc)			x	
Pantries and kitchens in train cars				x
Silver				x
Upholstery			x	
Clerk				
Billing	x			
Car record	x			
Chief, Pass Bureau	x			
Chief (Bureau not specified)	x			
District Passenger Office	x			
File	x			
Information Bureau	x			
Interchange	x			
Repair record	x			
Tariff	x			
Ticket	x			
Tonnage	x			
Train	x			
Transportation	x			
Yard	X			

ALPHABETICAL LIST OF OCCUPATIONS, 1/ THAT WOMEN ARE DOING IN 5 SELECTED RAILROADS

Occupation	Professional, clerical, and general	Maintenance of Way and Structures	Maintenance of Equipment and Stores	Transportation (Other than Train, Engine, and Yard)
Cook - restaurant				x
Section gang car				x
Counselor (for Mexican Nationals) - a labor foreman			x	
Crew caller	x			
Crew dispatcher	x			
Crossing flagman				x
Draftsman	x			
~~Drill press and grinding machine operator~~			~~x~~	
Engine supplyman			x	
Engine watcher			x	
Extra gangman		x		
Firelighter			x	
Foremen, coach yard			x	
Foreman asst., coach yard			x	
Helper				
Blacksmith			x	
Boiler maker			x	
Carman			x	
Car oiler			x	
Carpenter		x	x	
Counterman (stores)			x	
Electrician			x	
~~Gripping press operator~~			x	
Grinder			x	
Machinist			x	
Molder			x	
Painter			x	
Patternmaker			x	
Pipe fitter		x	x	
Plater			x	
Signalman		x		
Upholsterer			x	
~~Wheel press operator~~			x	
Ice bunkers for air conditioning			x	
Ice coaches and diners			x	
Janitor	x	x	x	x
Journal box (packer, oiler)			x	
Kitchen worker (restaurant)				x

1/ Specifications.

ALPHABETICAL LIST OF OCCUPATIONS, by Division 1/ THAT WOMEN ARE DOING IN 6 SELECTED RAILROADS

Occupation	Professional, clerical, and general	Maintenance of Way and Structures	Maintenance of Equipment and Stores	Transportation (Other than Train, Engine, and Yard)
Laborer, NEC				
Air room			x	
Automatic control equipment			x	
Boiler shop			x	
Erecting Shop			x	
Machine shop			x	
Oil and waste reclamation			x	
Passenger car repair shop			x	
Power house			x	
Roundhouse			x	
Sheet metal shop			x	
Spring shop			x	
Stores			x	
Tank shop			x	
Yards			x	
Laundry worker				x
Lead laborer,			x	
Lubricator filler			x	
Maker, packing rolls for cars			x	
Maker, spring pad lubricators			x	
Matron	x		x	x
Messenger	x		x	x
Oiler - car shop and wheel shop			x	
Oiler - locomotive repair shop			x	
Operator, Bolt threader			x	
Crane			x	
Crimping press			x	
Drill press			x	
Grinding machine			x	
Elevator	x		x	
Lathe			x	
Magnaflux machine			x	
Mechanical devices (office)	x			
Motor vehnicle	x			
Punch press			x	
Steam hammer			x	
Transfer table			x	
Turntable			x	
Telephone switchboard	x			
Packer, wet asbestos in molds			x	
Passenger traffic representative	x			
Renovator, spring pad lubricators			x	
Rivet bucker			x	
Rivet heater			x	
Rodman		x		
Secretary	x			
Secret service operative	x			

4

ALPHABETICAL LIST OF OCCUPATIONS 1/ THAT WOMEN ARE DOING IN 6 SELECTED RAILROADS by Division

Occupation	Professional, clerical, and general	Maintenance of Way and Structures	Maintenance of Equipment and Stores	Transportation (Other than Train, Engine, and Yard)
Sectional storekeeper	X			
Section laborer (track women)		x		
Sorter (freight department)	x			
Sorter, scrap iron			x	
Statistician	x			
Stacker, lumber (sawmill)			x	
Stenographer	x			
Superintendent's asst. in charge of Student Telegraphy Program	x			
Supervisor, Women's (District)	x			
Supervisor, Reservation Bureau	x			
Supplyman (round house)			x	
Sweeper			x	
Telegrapher				x
Telegrapher, student				x
Ticket agent	x			
Ticket agent learner	x			
Timekeeper extra gang		x		
Ticket puncher, gateman				x
Tractor driver				x
Upholsterer			x	
Waitress				x
Wheel painter			x	

1/ The list is based on terminology as used by various railroads and in some instances there is overlapping of duties. Some job titles are general classifications and therefore include some of the more specific job titles. Only a few of the railroads reported on clerical jobs; therefore this list is very incomplete on clerical occupations women are doing.

2/ The divisions are I.C.C. classifications.

STATEMENT SHOWING EMPLOYMENT OF WOMEN IN THE RAILROAD INDUSTRY,
BY I.C.C. OCCUPATIONS, AS REFLECTED IN TABULATIONS
FOR THE SELECTIVE SERVICE CENSUS

ICC Code	Occupation Classification	Number
001	Executive General Officers and Assistants	16
002	Division Officers and Staff Assistants	12
003	Professional and Subprofessional Assistants	83
004	Supervisory or Chief Clerks Major Depts.	34
005	Chief Minor Dept. and Assistant Chief Clerks	271
006	Clerks and Clerical Specialists A	865
007	Clerks B and C	22,144
008	Mechanical Office Device Operators	4,325
009	Stenographers and Secretaries A	1,434
010	Stenographers and Typists B	9,389
011	Storekeepers Sales Agents and Buyers	92
012	Ticket Agents and Assistant Ticket Agents	80
013	Traveling Auditors or Accountants	4
014	Telephone Operators and Office Assistants	3,558
015	Messengers and Office Boys	1,303
016	Elevator Operators and Office Attendant	111
017	Lieutenants and Sergeants of Police	5
018	Patrolmen and Watchmen	33
019	Traffic Agents and Inspectors	81
020	Claim Agents or Investigators	8
021	Freight Claim Agents or Investigators	9
023	Misc. Trades Workers other than Plumbers	15
024	Motor Vehicle and Motor Car Operators	55
026	Janitors and Cleaners	1,099
028	Maintenance of Way and Scale Inspectors	3
029	Bridge and Building Skilled Gang Foremen	1
030	Bridge and Building Carpenters	1
032	Bridge and Building Painters	4
034	Helpers and Apprentices, Maintenance of Way	71
036	Portable Steam Equipment Operator Helper	1
037	Pumping Equipment Operators	13
038	Gang Foremen Extra Gang Labor	10
040	Gang or Section Foremen	4
041	Extra Gang Men	822
042	Section Men	1,640
043	M of Way Laborers other than Track etc.	198
044	General Foremen and Inspectors Signal	1
046	Signalmen and Signal Maintainers	1
047	Linemen and Groundmen	2
048	Assistant Signalmen and Signal Maintainers	8
049	Signalmen and Signal Maintainer Helpers	5

ICC Code	Occupation Classification	Number
050	General Assistant General and Department Foremen	1
052	Inspectors of Equipment Shop and Stores	1
053	Gang Foremen and Leaders Skilled Labor	13
055	Boilermakers	7
056	Carmen A and B	42
057	Carmen C and D	36
058	Electrical Workers A	11
059	Electrical Workers B	6
061	Machinists	41
064	Skilled Trades Helpers M of E and S	2,794
065	Helper Apprentices M of E and S	5
066	Regular Apprentices M of E and S	24
067	Coach Cleaners	6,192
068	Gang Foremen Shops etc.	54
069	Gang Foremen Stores etc.	51
070	Classified Laborers Shops etc.	1,674
071	General Laborers Shops etc.	4,951
072	General Laborers Stores etc.	1,955
073	Stationary Engineers Steam	2
074	Stationary Firemen Oilers etc.	5
075	Chief Train Dispatchers	1
076	Train Dispatchers	1
077	Train Directors	1
078	Station Agents Major Stations Montel	17
079	Station Agents Smaller Stations Montel	321
080	Station Agents Telegrapher or Telephone	285
081	Chief Telegraphers and Telephoners	1
082	Clerk Telegraphers and Telephoners	527
083	Telegraphers Telephoners and Towermen	1,101
085	Supervising Baggage Agents	2
086	Baggage Agents and Assistants	6
087	Baggage Room and Station Attendants	973
090	Gang Foremen Freight Station etc.	3
091	Callers Loaders Scalers Scalers etc.	73
092	Station and Warehouse Truckers	1,254
093	Laborers Coal and Ore Docks etc.	20
094	Common Laborers Station and Warehouse	99
095	Stewards Diner Supervisors and Managers	59
096	Chefs and Cooks Restaurants and Diners	27
097	Waiters Camp Cooks and Kitchen Help	991
098	Marine Officers and Workers	44
099	Transportation and Miner Inspectors	11

ICC CODE	OCCUPATION CLASSIFICATION	NUMBER
101	Train Attendants	106
102	Bridge Operators and Helpers	3
103	Crossing and Bridge Flagmen and Gatemen	506
104	Laundry Foremen and Laundry Workers	892
105	Yardmasters	27
107	Switchtenders	32
109	Inside Hostlers	1
112	Asst Road Passenger Conductors	23
116	Road Passenger Brakemen and Flagmen	78
117	Road Thru Freight Brakemen and Flagmen	4
120	Yard Brakemen and Yard Helpers	31
121	Road Passenger Engineers and Motormen	1
122	Road Thru Freight Engineers and Motormen	2
124	Yard Engineers and Motormen	1
127	Road Local Freight Firemen and Helpers	1
201	Station Caretakers etc.	204
211	Doctors	3
212	Hospital Employees other than Doctors	230
	Total	73,640

This list of Occupations, by Individual Railroad, was done before the Southern Pacific R.R. was received from M.A.W. Occupations in these S.P. Divisions cannot be added, except in a few cases, because job terminology differs - hence this list can be used only as type of jobs found in the various I.C.C. Divisions

CODE NUMBERS FOR RAILROADS IN ATTACHED LIST OF OCCUPATIONS:

#7 Chicago & Northwestern Railway Co., Chicago, Ill.

8 Illinois Central Railroad " " "

6 Pennsylvania Railrpad " " "

5 Denver & Rio Grande Western Railroad, Denver, Colorado.

1 " " " " " " Salt Lake City, Utah.

2 Southern Pacific Railroad Company, Ogden, Utah.

3 Union Pacific " " " "

4 Union Pacific " " Salt Lake City, Utah.

The number of women in each job is entered by individual railroad if reported. "*" indicates that women are employed but number of women is not reported.

OCCUPATIONS ON WHICH WOMEN ARE EMPLOYED IN SELECTED - RAILROADS

DIVISION AND OCCUPATION	NUMBER OF WOMEN EMPLOYED TOTAL	#7	#8	#6	#5	#1	#2	#3	#4	#9
DATE OF SURVEY		7/43	7/43	7/43	5/43	5/43	4/43	4/43	4/43	5/44
I. Executives, Officials, & Staff Assts. -										1
II. Professional, Clerical, and General										
Draftswomen				5						
Supervisor of Women's Employment				1	1		1			
Cashier					*					
Chief Clerk				1	*					
Chief of pass. bureau					*					
Clerks			4	22	*		*			
File Clerk				1			*			
Clerks, tariff distributors			10							
Sorters, (clerical) freight dept.									1	
Mechanical office device operators				34	*		*			682
Secretaries (Secret Service Operatives)				28	*					5
Secretaries & stenographers				15						*
Specialists (statistics) (Statistician)			1							109
Stenographers			1		*		*			
Stenog. and typist			3	42	*		*			983
Agents & ticket punchers (gate keepers)			*							
Ticket agents (learners)			4							
Ticket sellers				49						
Student ticket clerk					*					
District pass. office (NR job)			2							
Information bureau			3							
Reservation "			14							
Telephone operator			23	18	*					408
Messenger			1	2	*		*		6	163
Elevator pilot op.					*					10
Passenger representatives (rides trains as special rep. of road)				4						
Custodian dept.			31					1		
Clerical in yard (not in Gen'l. office)										
Billing clerk			*							
Car checker					*					
Car orders (takes orders from different RR's & distributes to yard)			*							
Car records			*							
Engine crew dispatchers							*			
Engine dispatcher					*					
Extra gang timekeepers					*					
Home runs movement of cars in terminal			*							
Interchange clerk			*							
Record writer (records of repairs- new job for women)			**							
Tonnage clerk					*					
Tool room attendant							*			
Train order operators (checking movement of passenger trains)							*			
Transportation clerk (new job for F)							*			
Yard checker					*					
Yard clerk					*		*			

OCCUPATIONS ON WHICH WOMEN ARE EMPLOYED IN RAILROADS

DIVISION AND OCCUPATION	NUMBER OF WOMEN EMPLOYED TOTAL	#7	#8	#6	#5	#1	#2	#3	#4	#9
DATE OF SURVEY		7/43	7/43	7/43	5/43	5/43	4/43	4/43	4/43	
II (cont)										
Office - store dept.(job not spec.)			2							
Offices-(jobs not reported)						21				
Office worker - job NR								1		
Office employees - jobs NR									51	
See "Stores" under Division IV for additional clerical jobs.										
III. Maintenance of Way & Structures										
Carpenter helper							*			
Extra gang men					*					
Section gang cooks					*					
Section men (trackwomen)	(all negro)		75	(58 negro) 61	*	2	*			44
Signal man helper				1						
IV. Maintenance of Equipment & Stores										
Blacksmith shop										
Bolt machine operator					*					
Steam hammer "							*			
Electricians helpers			*		*					
Battery repairman					1					
Machinist's helpers			*		*					
Helpers (other than Elec.& machinists)										
On burnishing lathe (for axles)			*							
Carman (no description of job)					*					
" operate drill presses			*							
" work on trucks(freight car)			*							
				(22 negro)						
Car oiler (pack journal boxes)				26						
Carpenter					*					
On gripping press(Press takes wheel from axle)			*							
Painter					1					
Rivet heater			NR							
Wheel press(2 F x 3 M doing same work 5 M did before)			2							
Upholsterers - power mach. op.			NR					See schedule no coach yard ??		
Coach cleaners	123(?)		96	234	9	7	*		34	835
Laborers										
Cleaning bearings for journal boxes			*							
Cleaning box cars							*			
Cleaning & repair of box cars					*					
Clean and supply cabooses			*		*					
Grease room attendant					*					
Operate machine,which works over old grease,filling oil cans								*		
Ice coaches					*					
Ice bunkers for air conditioning					*					
Oiler,dispensing oil,filling lanterns & grease gun			*							
Oil house						1				
Oil & waste reclamation					3					

OCCUPATIONS ON WHICH WOMEN ARE EMPLOYED IN SELECTED - RAILROADS

DIVISION AND OCCUPATION	NUMBER OF WOMEN EMPLOYED TOTAL	#7	#8	#6	#5	#1	#2	#3	#4
DATE OF SURVEY		7/43	7/43	7/43	5/43	5/43	4/43	4/43	4/43
IV. Maintenance of Equipment & Stores (continued)									
Laborers (continued)									
Power house laborer					*				
Press operator in reclamation shop- Crimping rail anchors.			1						
Rivet heater			*						
Round house labor									
Engine supply men					*			3	
Engine watchers					*				
Engine wipers								8	
Turn table operators					*			5	3
Washing cab windows of engines							*		
Wiping engine jackets, cleaning Cab windows & head lights, washing tanks, polishing bells, etc., etc.		7		70	*	28			
Transfer table operator					*				
Sweepers & cleaners		17				3	*	3	19
Laborer N.E.C.			*		*				41
Stores									
Checking in and out of freight cars						1			
Checker and counter work							*		
Counterman helper									3
Engine supply house									3
Laborer-sorting scrap iron & unloading lumber and stacking.						*			
Laborer NEC					*				
Oil house attendant, asst.						1			
Receiving clerk asst.						1			
Sectional storekeeper, asst.						*			
Shipping assistant						1			
Store attendants, keep us stock, deliver materials to and from cars.				14					
Store deliveries (messengers)						*	*		
Store helpers					*		*	5	
V. Transportation(other than train, engine & yard									
Asst. Supt. of Telegraph Dept. in charge of Student Teleg. Program					1				
Telegrapher			1		*				
Telegrapher students or trainees					*		50		13
Baggage room (NR job)									2
Ice diners					*				
Restaurant									
Fry cooks									3
Kitchen helpers									7
Pantry cooks									2
Waitresses					*				9
Crossing flagmen			8						
Crossing watchmen				(21 negro) 33					
Laundry workers			34						
Linen room attendant					*				

OCCUPATIONS ON WHICH WOMEN ARE EMPLOYED IN SELECTED - RAILROADS

DIVISION AND OCCUPATION	NUMBER OF WOMEN EMPLOYED TOTAL	#7	#8	#6	#5	#1	#2	#3	#4
DATE OF SURVEY		7/43	7/43	7/43	5/43	5/43	4/43	4/43	4/43
VI. (a) Transportation (Yard Masters, Switch tenders and hostlers)	-								
VII. (b) Transportation (train & Engine Flagmen	37								

CODE NUMBERS FOR RAILROADS IN ATTACHED LIST OF OCCUPATIONS:

#7 Chicago & Northwestern Railway Co., Chicago, Ill.

8 Illinois Central Railroad " " "

6 Pennsylvania Railrpad " " "

5 Denver & Rio Grande Western Railroad, Denver, Colorado.

1 " " " " " " Salt Lake City, Utah.

2 Southern Pacific Railroad Company, Ogden, Utah.

3 Union Pacific " " " "

4 Union Pacific " " Salt Lake City, Utah.

The number of women in each job is entered by individual railroad if reported. "*" indicates that women are employed but number of women is not reported.

OCCUPATIONS ON WHICH WOMEN ARE EMPLOYED IN SELECTED - RAILROADS

DIVISION AND OCCUPATION	NUMBER OF WOMEN EMPLOYED TOTAL	#7	#8	#5	#1	#2	#3	#4	#9
DATE OF SURVEY		7/43	7/43	7/43	5/43	5/43	4/43	4/43	4/43 5/44
I. Executives, Officials, & Staff Assts. -									1
II. Professional, Clerical, and General									
Draftswomen				5					
Supervisor of Women's Employment				1	1		1		
Cashier					*				
Chief Clerk				1	*				
Chief of pass. bureau									
Clerks		4		22	*		*		
File Clerk				1			*		
Clerks, tariff distributors		10							
Sorters, (clerical) freight dept.								1	
Mechanical office device operators				34	*		*		68
Secretaries Secret Stenographer				28	*				
Secretaries & stenographers				15					109
Specialists (statistics)		1							
Stenographers		1			*		*		
Stenog. and typist		3		42	*		*		983
Agents & ticket punchers (gate keepers)		*							
Ticket agents (learners)		4							
Ticket sellers				49					
Student ticket clerk					*				
District pass. office (NR job)		2							
Information bureau		3							
Reservation "		14							incl. in above
Telephone operator		23		18	*				108
Messenger		1		2	*		*	6	163
Elevator pilot					*				10
Passenger representatives (rides trains as special rep. of road)				4					
Custodian dept.		31						1	
Clerical in yard (not in Gen'l. office)									
Billing clerk		*							
Car checker					*				
Car orders (takes orders from different RR's & distributes to yard)		*							
Car records		*							
Engine crew dispatchers							*		
Engine dispatcher					*				
Extra gang timekeepers					*				
Home runs movement of cars in terminal		*							
Interchange clerk		*							
Record writer (records of repairs- new job for women)		**							
Tonnage clerk					*				
Tool room attendant							*		
Train order operators (checking movement of passenger trains)							*		
Transportation clerk (new job for F)							*		
Yard checker					*				
Yard clerk					*		*		

OCCUPATIONS ON WHICH WOMEN ARE EMPLOYED IN RAILROADS

DIVISION AND OCCUPATION	NUMBER OF WOMEN EMPLOYED TOTAL	#7	#8	#6	#5	#1	#2	#3	#4	#9
DATE OF SURVEY		7/43	7/43	7/43	5/43	5/43	4/43	4/43	4/43	
II (cont)										
Office - store dept.(job not spec.)			2							
Offices-(jobs not reported)						21				
Office worker - job NR								1		
Office employees - jobs NR									51	
See "Stores" under Division IV for additional clerical jobs.										
III. Maintenance of Way & Structures										
Carpenter helper							*			
Extra gang men					*					
Section gang cooks					*					
Section men (trackwomen)	(all negro) (58 negro) 75			61	*	2	*			44
Signal helper				1						
IV. Maintenance of Equipment & Stores										
Blacksmith shop										
Bolt machine operator					*					
Steam hammer "							*			
Electricians helpers			*		*					
Battery repairman					1					
Machinist's helpers			*		*					
Helpers (other than Elec.& machinists)										
On burnishing lathe (for axles)			*							
Carman (no description of job)					*					
" operate drill presses			*							
" work on trucks(freight car)			*							
Car oiler (pack journal boxes)	(22 negro) 26									
Carpenter					*					
On gripping press(Press takes wheel from axle)			*							
Painter					1					
Rivet heater			NR							
Wheel press(2 F x 3 M doing same work 5 M did before)			2							
Upholsterers - power mach. op.			NR							
Coach cleaners	123(?)		96	234	9	7	*	see sched no coach yard ??	34	895
Laborers										
Cleaning bearings for journal boxes			*							
Cleaning box cars							*			
Cleaning & repair of box cars					*					
Clean and supply cabooses			*		*					
Grease room attendant					*					
Operate machine,which works over old grease,filling oil cans								*		
Ice coaches					*					
Ice bunkers for air conditioning					*					
Oiler,dispensing oil,filling lanterns & grease gun			*							
Oil house						1				
Oil & waste reclamation					3					

OCCUPATIONS ON WHICH WOMEN ARE EMPLOYED IN SELECTED - RAILROADS

DIVISION AND OCCUPATION	NUMBER OF WOMEN EMPLOYED TOTAL	#7	#8	#3	#5	#1	#2		
DATE OF SURVEY	7/43	7/43	7/43	5/43	5/43	4/43	4/43	4/43
IV. Maintenance of Equipment & Stores (continued)								
Laborers (continued)								
Power house laborer				*				
Press operator in reclamation shop- Crimping rail anchors.		1						
Rivet heater		*						
Round house labor								
Engine supply men				*			3	
Engine watchers				*				
Engine wipers							8	
Turn table operators				*			5	3
Washing cab windows of engines						*		
Wiping engine jackets, cleaning Cab windows & head lights, washing tanks, polishing bells, etc., etc.	7		70	*	28			
Transfer Fuel operator				*				
Sweepers & cleaners	17				3	*	3	19
Laborer N.E.C.		*		*				41
Stores								
Checking in and out of freight cars					1			
Checker and counter work						*		
Counterman helper								3
Engine supply house								3
Laborer-sorting scrap iron & unloading lumber and stacking.					*			
Laborer NEC				*				
Oil house attendant, asst.					1			
Receiving clerk asst.					1			
Sectional storekeeper, asst.					*			
Shipping assistant					1			
Store attendants, keep us stock, deliver materials to and from cars.			14					
Store deliveries (messengers)					*	*		
Store helpers				*		*	5	
V. Transportation(other than train, engine & yard								
Asst. Supt. of Telegraph Dept. in charge of Student Teleg. Program				1				
Telegrapher		1		*				
Telegrapher students or trainees				*		50		13
Baggage room (NR job)								2
Ice diners				*				
Restaurant								
Fry cooks								3
Kitchen helpers								7
Pantry cooks								2
Waitresses				*				9
Crossing flagmen		8						
Crossing watchmen			(21 negro) 33					
Laundry workers		34						
Linen room attendant				*				

OCCUPATIONS ON WHICH WOMEN ARE EMPLOYED IN SELECTED - RAILROADS

DIVISION AND OCCUPATION	NUMBER OF WOMEN EMPLOYED TOTAL	#7	#8	#6	#5	#1	#2	#3	#4
DATE OF SURVEY		7/43	7/43	7/43	5/43	5/43	4/43	4/43	4/43
VI. (a) Transportation (Yard Masters, Switch tenders and hostlers)	-								
VII. (b) Transportation (train & Engine Flagmen	37								

OCCUPATIONS- TRANSPORTATION - 1942

Return to WSJ Transportation

December 19, 1942

Miss Beatrice Oppenheim
79-01 35th Avenue
Jackson Heights, N.Y.

My dear Miss Oppenheim:

We were glad to know the material on women in shipyards reached you promptly.

Regarding women as railroad workers, we are able to send you only a few brief statements from newspaper clippings, but they will give an indication of the widespread plans under way to use women in various jobs. They are of course already employed as clerks, telegraph operators, messengers and teletype operators.

The Office of Defense Transportation is definitely interested in recruiting women for the railroads, and I suggest you write to Miss Dorothy Sells, director of woman personnel, Office of Defense Transportation, Washington, D.C., for all she can give you. The enclosed press release from that agency - an extra copy we had - will be of interest.

Pennsylvania Railroad has opened two schools to train young college women for the duties of ticket sellers and train information and reservation bureau attendants.

Half a dozen women are block operators for Pennsylvania Railroad in the signal towers of the New York zone. At the Sunnyside yards of the Penna. (Queens, N.Y.) women polish up the sides of the engines with oily waste and they are doing this work in yards in other cities.

At its Canton, Ohio roundhouse - 40 women are employed - are sweeping, servicing locomotives to go out on the road, oiling cleaning, working in the storehouse, even climbing up on the boilers to polish the bells.

Southern Railway was to open a school in Charlotte, N.C. to train young women as telegraphers. (There is still a great demand for telegraph operators, particularly on railroads where a large part of the territory is still operated by telegraph).

Southern Pacific Railroad, at its Sparks, Nevada shop - women are operating the turntable, working in the tool room, and sweeping the machine shop floors.

At its Portland, Oregon yards, women are hired as "laborers", but jobs range from cleaning to rivet heating and blacksmithing.

At its Tucson, Arizona division, more women will be hired as soon as facilities can be provided; will be assigned to work in the roundhouse, maintenance dept., and as janitors.

You will also want to see the article in the December issue of The INDEPENDENT WOMAN, on women in railroads. It is rather comprehensive, and a good deal of preliminary searching musthave been necessary.

You can also get additional information from Margaret Stevenson, editor of the B. & O. magazine, Baltimore & Ohio Railroad, Baltimore.

Information to any extent, about the older woman in war industries has not been compiled, and in spite of the numerous feature stories of older women in war jobs that appear in the papers from time to time, we feel that industry still prefers the younger woman. A little material from our files is enclosed - and I regret we have to make the same explanation as in our other letter. We have many more newspaper clippings than these few pages would indicate, but we have no copies of them to send. I believe you will be especially interested in a story in the Christian Science Monitor of Sept. 29th (p. 11), on women over 40 being real assets in industry.

Of course, announcements giving upper age limits for workers are fast disappearing, and it is true the older woman who is qualified stands a better chance of finding a job than ever before. However, it is more likely that this "chance" will be in stores, laundries, beauty parlors, and certain civilian industries, than in the war plants, except where preference is given to wives and mothers of service men.

There have been various women's organizations interested in the employment problems of the older woman, and I presume you will learn of such efforts when you begin collecting material on this subject. More often, this was in the field of business and the professions. You might find certain type of information from Miss Alice Waldo, 489 Fifth Avenue, who heads up the New York City branch, of the following organization:

The Old Age Counseling Center (founded by Dr. Lillien J. Martin, S.F.)

Possibly you should get data also from the Trainee Acceptance Center, Philadelphia, which gives tests for hand dexterity, physical strength, paper work, and research - as their records on employability of older women might be very revealing.

Sincerely yours,

Mary Anderson, Director

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Platt - 5593

OFFICE OF WAR INFORMATION
OFFICE OF DEFENSE TRANSPORTATION

For Immediate Release
Tuesday, November 24, 1942 PM-4163

Preliminary plans for a concerted attack on the critical railroad problem of spot labor shortages through inter-railroad transfer of workers were discussed yesterday by a 12-member labor-management conference group in its first formal session with officials of the Office of Defense Transportation, it was announced today.

The six railroad chief executives and six top railroad labor officials who compose the industry-wide group also discussed plans and determined procedure for the creation of other programs to increase the railroads' contribution to the war effort.

A subcommittee of the labor-management group, it was agreed, will meet soon to make more complete plans for the temporary shifting of labor from points at which surpluses exist to spot troubled by shortages.

The subcommittee will plan detailed procedure for determination of specific periods for which workers may be given leaves of absence, for maintenance of seniority rights of the transferred workers, for notice which will be given workers recalled to their original jobs, and for other arrangements in the program of spreading the available labor supply over the industry.

Workers whose occupations were considered suitable for the project included some of the train and engine service crews--locomotive engineers, firemen, brakemen and switchmen--and shop mechanics and maintenance-of-way men.

The employer and worker representatives agreed in principle to the creation of labor-management cooperative groups throughout the industry and expressed willingness to set up such groups to handle problems related to the war effort.

Meeting with the group were Joseph B. Eastman, ODT Director, who presided; Otto S. Beyer, Director of the Division of Transport Personnel, and V. V. Boatner, Director of the ODT Division of Railway Transport.

The railroad labor organizations were represented by D. B. Robertson, President of the Brotherhood of Locomotive Firemen and Enginemen; G. M. Harrison, President of the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees; S. J. Hogan, President of the National Marine Engineers' Beneficial Association; B. M. Jewell, President of the Railway Employes' Department of the American Federation of Labor; A. F. Whitney, President of the Brotherhood of Railroad Trainmen, and J. G. Luhrsen, Executive Secretary of the Railway Labor Executives' Association.

Management representatives at the meeting were L. W. Baldwin, Chief Executive Officer of the Missouri Pacific Lines; M. W. Clement, President of the Pennsylvania Railroad Company; J. B. Hill, President of the Louisville and Nashville Railroad, and E. W. Scheer, President of the Reading Railway System. J. J. Pelley, President of the Association of American Railroads, participated as ex officio member of the management group.

C. E. Denney, President of the Northern Pacific Railroad, and E. E. Norris, President of the Southern Railway System, also are members of the management group.

(over)

The labor-management conference group was organized October 30 under the auspices of the ODT to provide a systematic cooperative arrangement by which the experience of railroad labor and executives could be drawn upon in a program of maximum utilization of facilities, equipment and manpower in the war effort.

In addition to the plans for the inter-railroad transfer of labor, the conference yesterday discussed its own working procedure and such problems as conservation of fuel and other materials and recruiting and training of labor.

Suggestions advanced at the conference included the following:

When a worker is inducted into one of the armed services, a member of his family, frequently a woman, can be hired with the inducted worker's seniority to be maintained during his absence.

Men now on railroad jobs which can be perfomed by women can, it was agreed, be shifted to jobs which require men. Women can be hired to take over the positions vacated by the men- the men to retain their seniority within original jobs. For example, it was suggested men in office jobs could to a greater extent be shifted to outdoor service.

Able bodied men who are employed in non-essential activities, it was felt, can be drawn into the railroad industry, recognized as essential to the war effort. The possibility of importing labor from Puerto Rico or Mexico also was discussed.

Railroad employes recently retired could be recalled to the industry to take jobs to which they are suited, and employes could be encouraged by the brotherhoods, employers and government to postpone their retirement.

Training programs could be expanded and accelerated to fit new workers for railroad jobs and present employes for upgrading.

Railroad training programs and government aids for such projects were discussed at the meeting by E. D. Woolpert of the ODT Division of Transport Personnel.

The conferees set December 17 as the date for their next meeting.

Botsford-6488-9

OFFICE OF WAR INFORMATION
OFFICE OF DEFENSE TRANSPORTATION

For Immediate Release
Wednesday, September 16, 1942 PM-3951

A first-hand study of ways in which women are helping to meet personnel shortages in the transportation industry in England will be undertaken by the Office of Defense Transportation, it was announced today.

The survey, expected to take two months, will be made by Miss Dorothy M. Sells, Chief, of the Personnel Supply Section of ODT's Division of Transport Personnel, who will go to England for the study.

In explaining her mission, Miss Sells pointed out that while much is known in this country about what work women are doing in the transportation field in England there are many factors involved which make a first-hand study necessary.

"Women are being used on a large scale to meet personnel shortages in England in jobs formerly filled by men, and this information should be very useful in mapping similar programs in the United States," Miss Sells said.

"It is inevitable that a great many women will be employed in transportation work in the United States, as more and more men are called into war industries and the armed services. This may necessitate certain adaptations in the industry, a phase of the problem in which considerable progress has been made in England."

OCCUPATIONS

TRANSPORTATION - 1943

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Jones--76437

OFFICE OF WAR INFORMATION
OFFICE OF DEFENSE TRANSPORTATION ODT-319

For Immediate Release
Saturday, July 31, 1943

The total number of workers engaged in the local transit industry--street cars and city buses--will reach 250,000 in November, the Office of Defense Transportation's Division of Transport Personnel estimated today. Its forecast, based on surveys for the period, May to November, 1943, indicated a rise of 4.1 per cent in this type of employment.

To fill out their ranks the companies engaged in local transportation will require 14,500 additional workers. This total requirement has been broken down to requirements of 6,900 vehicle operators, 600 mechanics, 5,800 unskilled workers, and 1,200 other unclassified skilled and semi-skilled workers. The division reported there has been a marked increase in shortages of mechanics (which holds true for the entire automotive industry).

The division reported a decline in needs for vehicle operators but added that for all classes of local transit employees there has been an increasing rate of separation and greater difficulty in recruiting replacements.

X-18706

Ross-76437

OFFICE OF WAR INFORMATION

OFFICE OF DEFENSE TRANSPORTATION

For Immediate Release
Thursday, April 8, 1943

ODT-193

Critical manpower shortages in the Intercity Bus Industry are being checked by the widespread employment of women in a large variety of occupations, Otto S. Beyer, Director of the Division of Transport Personnel, Office of Defense Transportation, pointed out today.

Gasoline rationing and the need to transport large numbers of war workers to and from their jobs have combined to place an unprecedented load on the intercity buses, while transfers to other industries and calls to the armed forces are draining bus personnel, Mr. Beyer said. An ODT analysis of the latest survey conducted by the United States Employment Service in the industry shows that bus companies, in an effort to offset critical personnel shortages, are hiring women to fill jobs formerly held by men.

Practically all of the reporting companies now employ women, and the percentage of women employees appears to be increasing each month. While women are still being employed primarily in clerical occupations, they are also being hired in large numbers as ticket sellers, information clerks, car washers, shop helpers, and gasoline pump operators.

Two companies, one in Maine and the other in California, reported a total of 223 women bus drivers, of whom 220 were employed as long distance drivers. In Dayton, Ohio, where a critical labor shortage exists, one company is endeavoring to hire women as bus drivers and conductors, and other concerns indicate a willingness to engage women drivers if labor shortages become more pronounced.

Although a number of the reporting companies are also employing Negroes to meet manpower shortages, so far practically all Negroes in the Intercity Bus Industry are engaged in unskilled or semi-skilled jobs.

The survey shows that the manpower needs of the intercity buses are expected to increase almost five per cent in the current year, Mr. Beyer said. A number of companies are already reporting critical shortages of drivers, mechanics, and other skilled workers, and the situation promises to become even more acute in coming months. Already, the inability to obtain drivers and mechanics is hindering the maintenance of necessary service. One company reported that the lack of adequate vehicle maintenance had caused more motor failures in December than had occurred during the entire previous year.

New workers are being recruited by the industry through newspaper advertising, through the unions, and on the recommendation of present employees. The United States Employment Service has been used largely to recruit clerical and unskilled labor. Skilled workers, it was explained, are usually obtained through the unions or directly by the companies.

X-13357

ADVANCE RELEASE

ADVANCE RELEASE: For Monday Afternoon Papers, April 5, 1943
Ross-76437

OFFICE OF WAR INFORMATION
OFFICE OF DEFENSE TRANSPORTATION ODT-184

State labor regulations do not prevent the employment of women in the transportation industries, Otto S. Beyer, Director of the Division of Transport Personnel, Office of Defense Transportation, pointed out today.

For the most part, laws affecting the employment of women follow the accepted labor practices of the transportation industries, Mr. Beyer said. In cases where legislation regulating the employment of women deviates from general labor standards, exemptions are being granted if found necessary to facilitate the war effort.

"Employment of women in every job where a woman can possibly be used has been made necessary by repeated calls for eligible men to enter the armed forces and by increasing demands for skilled workers in war industries," Mr. Beyer said. "Though in the past, transportation has been considered predominantly a man's industry, it is now imperative that women should be employed in many occupations customarily reserved for men.

"To promote efficiency and output as well as to protect the health and safety of women workers, most states have included employment standards for women in their State laws. Since the war began, however, provisions have been made in most of the States for obtaining exemptions from certain laws. When war increased the demand for around-the clock production, every State adopted regulations permitting war plants to employ women at night, if such employment were found necessary for maximum output. In most States, temporary permits to exceed the legal number of employment hours are granted to meet emergency situations. Several States also have relaxed their restrictions on weight lifting and on prohibited occupations for women. This is done by temporary exemptions granted by the appropriate State authority when a carrier finds it necessary for efficient operation."

A digest of State legislation affecting the employment of women has been prepared by the Division of Transport Personnel, ODT, from materials supplied by the Division of Labor Standards, the Women's Bureau and the Children's Bureau of the United States Department of Labor.

The publication explains that employers seeking exemptions from such legislation should make application to their State labor departments setting forth the need for exemption and the type of war work carried on by the industry. The State labor department affected will then review the application and will take into consideration such additional factors as existence of a labor shortage, possibility of more efficient operations and development of more adequate training facilities. Exemptions are issued only for work directly related to the war effort. While they are usually given only for a specified period of time, renewal will be granted, if extension of the exemptions is found to be necessary.

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Ross--76437

OFFICE OF WAR INFORMATION

OFFICE OF DEFENSE TRANSPORTATION

For Immediate Release
Thursday, March 18, 1943 ODT-154

Women will constitute a major source of employment for the transportation industries in the coming year, it was emphasized today at a conference by transportation officials who told representatives of industry, of labor, and of Government that already women are doing a wide variety of jobs in the industries and, for the most part, doing them well.

More than 50 persons attended the first sessions of the two-day conference on "Womanpower in Transportation" called by Otto S. Beyer, Director of the Division of Transport Personnel, Office of Defense Transportation, to explore the possibilities for widespread employment of women in the transportation field.

"Probably nothing would disturb the entire war effort so much as a breakdown of our transportation facilities, "Mr. Beyer told the meeting. "It remains, therefore, the duty of the transportation industries, of labor, and of Government to provide manpower and to find relief for employees now working too long hours and replacements for those who must be spared for more direct war work. Never before in the history of the nation have we so looked to women to meet such a problem. Today, it becomes necessary for us to appraise the total picture and to see how we can improve the manpower situation, which in some fields is already becoming critical, through the utilization of women to meet our transportation personnel needs."

Discussion by representatives of the various transportation industries revealed that already 32 per cent of employees on one of the country's largest airlines are women and that this figure is rising at the rate of one-half per cent a month. Local transit companies are rapidly using women to replace men called to the armed forces or leaving the industry for other reasons and are employing them in a constantly widening variety of occupations. Railroad officials said they were well pleased with the work of women who are being brought in in large numbers to fill vacancies and to make possible the necessary expansions to meet the needs of the war effort. While women are being utilized to some extent in the trucking industry and have fitted in well in local delivery service, problems arising in over-the-road trucking have somewhat delayed the large scale employment of women in that field. Because heavy lifting constitutes approximately 80 per cent of the warehouse industry, the employment of women in the warehouses of the country has necessarily been slow, although even here there has been a gradual influx of women employees, a representative of the industry said. Inter-city bus lines are using a large number of women as drivers and on maintenance work, and an official of the National Automobile Dealers' Association said that more and more women are being employed for maintenance jobs, although the need for thorough training in this field has somewhat delayed their general employment.

With few exceptions, transportation officials expressed satisfaction with women employees. Representatives of the airlines, particularly, stressed the high quality of work which is being done by women in practically all phases of the industry.

X-12064

"Training, not sex, is the problem of the industry," one airline representative said. "Our women work around the clock, and we have no complaints regarding midnight shifts. We have women working in practically all departments, and the only job on which they fall short of the men is in heavy lifting. Outstanding jobs are being done on the airlines by women, and we believe that in general they are as good as men for the work."

The women bus and street car operator will become more prevalent as the year progresses, a local transit official told the conference. The industry's experiments with the employment of women to date has been satisfactory, and while a sizable number will be used in maintenance shops and garages, the large majority will be employed in operating posts where the greatest manpower shortage exists.

The railroads are finding that women can be used to replace men in many capacities, a railroad representative reported, and the number of women working on the railroads is expected to increase tremendously by the end of the year.

While women have been utilized satisfactorily by the trucking industry for delivery service and for short hauls, problems arising from loading and unloading from night runs and from accomodations on the road have delayed their extensive employment in over-the-road service.

A statistical summary of the employment of women in the transportation industries was presented by Mrs. Helen Robison, of the Office of Defense Transportation, and Miss Dorothy Sells, also of the ODT, presented her findings on a study of the British utilization of women in the transportation field.

Ross--76437

OFFICE OF WAR INFORMATION

OFFICE OF DEFENSE TRANSPORTATION

For Immediate Release
Thursday, March 18, 1943

ODT - 151

Local transit which is already experiencing the tightest manpower problem in the transportation field is threatened with a critical shortage of personnel before the end of 1943, Otto S. Beyer, Director of the Division of Transport Personnel, Office of Defense Transportation, announced yesterday.

To avoid or at least to postpone critical manpower shortages, Mr. Beyer said, transit companies are employing part time workers, are increasing the workweek, upgrading present employees, training unskilled workers for skilled jobs, and employing more Negroes and women to fill vacancies.

Basing his statement on the latest bi-monthly survey of the industry by the War Manpower Commission, Mr. Beyer pointed out that January reports showed critical manpower shortages in one or more occupations existed in 14 per cent of the 227 companies covered. These companies represent 87.5 per cent of the employment in the industry. In January, the reported employment in local transit was 233,000 persons. By the beginning of 1944, that figure is expected to rise to about 243,000.

Shortage of vehicle operators is still the industry's most acute problem. The need for operators represented more than half of all personnel shortages in the industry in January, and Mr. Beyer pointed out that additional drivers and motormen are needed to man present idle equipment or new equipment ordered as well as to relieve employees who are now working 60 to 70 hours without time off.

Along with an acute shortage of operators, some companies report an even greater need for mechanics to keep vital equipment in operation.

Labor needs of the industry for the next six months are estimated at 17,600. This figure, Mr. Beyer explained, represents vacancies at the time the survey was made, new jobs the industry expects to fill, and expected replacements of men called to military service.

Absenteeism, although not an acute problem, has become noticeable throughout the industry. The most frequent cause mentioned by companies reporting an absentee problem was long hours of employment without time off.

Employment of women in local transit is on the increase with 94 per cent of the companies covered by the survey reporting women on their payrolls. While the greatest number are still employed in clerical capacities or on unskilled jobs, women are also being used for other types of work, and their employment as vehicle operators, loaders, and even mechanics is becoming more widespread.

In January, Negroes represented about 4.2 per cent of the total employment of the 227 reporting companies. This was an increase over the figure for November when Negroes represented 3.7 per cent of all employees.

About one-sixth of the companies have their own formal training programs. Others have established on-the-job training and are filling vacancies through the upgrading of present employees.

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Transportation

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OFFICE OF WAR INFORMATION
OFFICE OF DEFENSE TRANSPORTATION

For Immediate Release
Tuesday, March 16, 1943

ODT-144

Experiences of four major branches of transportation in the employment of women will be recounted at the opening meeting of the two-day conference on Womanpower in Transportation, to be held in Washington March 18 and 19.

The conference has been called by Otto S. Beyer, Director of the Division of Transport Personnel, Office of Defense Transportation, to consider the widespread employment of women in transportation to replace men joining the armed forces.

The meeting will be held in Room 2117 New Post Office Building. Mr. Beyer will preside.

American experience with the employment of women in transportation will be discussed on Thursday morning by Charles G. Morgan, of the American Trucking Associations; Merwyn Kraft, American Transit Association; W. L. McMillen, American Airlines, Inc., and E. B. Dithridge, of the Pennsylvania Railroad. Mrs. Helen Robison of the Office of Defense Transportation, will present a statistical picture of women in the transportation field, and a three-minute report on the types of transportation jobs women can do will be made by representatives of each branch of the industry.

On Thursday afternoon, Miss Dorothy Sells, of the Office of Defense Transportation, will present a summary of the British experience with the employment of women. Her report will befollowed by a question and answer period.

Four problems with which industry is faced in the employment of women will be discussed at the Friday morning session. Mrs. Clara M. Beyer, of the Division of Labor Standards, Department of Labor, will speak on "State Laws and How They Affect Women in Transportation;" Miss Mary Anderson, of the Women's Bureau, Department of Labor, will outline adjustments which may be made in the transportation field where women are employed; Glenn Brockway, of the Bureau of Placement, War Manpower Commission, will discuss "Recruiting and Selecting Women for Transportation Jobs", and Philip Van Wyck, of the War Manpower Commission, and Miss Cornelia Edge, of the Office of Defense Transportation, will review recommended training programs for women in transportation jobs.

The final session of the conference will take place Friday afternoon. Representatives of labor and management at that meeting will discuss labor agreements as they affect the employment of women in transportation, and a general review of practical steps to be taken in encouraging the increased employment of women in the transportation field will be presented.

X-11925

Women in Transportation Industries

See also Miss Pedgen's OWI Release Folder

Release date	Release no.	Subject
11/16/42	JPM 4130	ODT calls on KRS 2 County to increase use of women
1/15/42	ODT 26	Transportation in Great Britain.
1/26/43 (also in this file)	ODT 48	Jobs in transportation held by women - Trucking, bus, local transit railroads.
4/5/43	ODT 184	State legislation affecting employment of women in transportation
4/8/43	ODT 193	Intercity Bus Industry Shortages
4/9/43	ODT 196	opportunities in jobs for women in transportation - Conference on War & Post-War demands for Trained Workers.
7/31/43	O.D.T. 319	Number of workers engaged in local transit industry - street cars & buses will reach 230,000 by Nov. (Nothing by ex)

Nyswander

Food Information Series
United States Department of Agriculture
Office of Information
Washington 25, D. C.

M.T. has copies

July 31, 1943 No. 47

Subject: Advice for Women and Girls doing Farm Work

Field Distribution: War Board members, Extension Editors, BAE analysts, FDA Marketing Reports Chiefs, SCS, FSA, FCA Regional Information Chiefs

Suggested use: For press and radio releases; speeches.

1. What To Do To Get Into Condition for Farm Work.

As most farm work calls for the use of all muscles, the goal to be sought is top-notch physical condition. If women are to undertake a course of 3 or 4 weeks of training for farm work it would be highly desirable to have along with that training a program of physical conditioning carried out under the supervision of a trained physical education worker. The plan for such a program might well be arranged by a committee of experts in the field. Because women's muscular make-up is quite different from that of men, the vigorous setting-up exercises arranged for men in the military service might well be supplanted by exercises of a different type for women.

Where girls or women go to work on farms with no previous training, the most important thing to keep in mind is that they must start easy. For any but young women in the best of physical condition, a workday of 6 to 7 hours is ample for the first week. The step-up to a full-time day could come perhaps the second week. One of the advantageous facts about most farm work is that the worker will become fatigued and inclined to stop or slow down before actual injury from overwork occurs.

If it is not possible for beginners to have a shorter workday than the others because of transportation or similar complications, they can take longer and more frequent rest periods.

2. How To Use Muscles Correctly When Bending, Lifting, Hoeing, etc.

The chief caution to be observed in weight lifting is to bend the knees and not the back when picking up any heavy article. This enables the strong muscles of the legs and thighs to take the strain of the lifting, whereas bending over and picking up a heavy weight by straightening the back will be extremely likely to cause back strain or serious muscular injury. For the same reason, when hoeing or bending over for weeding, do not assume a round-shouldered or bent-back position. Keep the back straight, bend from the waist; and squat with knees bent, stopping to change position and straighten out now and then.

1/ Information from the Women's Bureau, U. S. Department of Labor.

3. Lifting Heavy Objects--How Much Weight Can a Woman Lift?

There has been much discussion as to how much weight a woman can safely lift. The average girl or woman in good condition can lift or carry 25 pounds without any difficulty. She can lift 25 to 35 pounds without fear of doing herself injury, provided she lifts the weight in a proper manner. But if she lifts continuously weights of 35 pounds and over she might become tired, and when tired strain or injure herself. Whether a woman can lift over 35 pounds depends on the woman. Many could lift up to 50 pounds without doing themselves harm. Exceptional ones might lift a little more, but any continuous work of lifting weights over 35 pounds without mechanical aid should not be encouraged.

In this matter of weight lifting, consideration should be given to the question whether the work is done for a short period within an hour or two, or whether it is continuous--that is, a continuous repetition of the work. Short periods of such work would be all right. Continuous lifting of such weights would probably be too fatiguing and cause much injury. Weights should not be lifted higher than the level of shoulders or head. Up to that point, the muscles of the legs and thighs help, but above that the strain comes on the back or shoulders and strain or other injury is more likely to result.

A combination of weight lifting and carrying is bad. Thirty-five-pound vegetable crates can be lifted and loaded much more easily than they can be carried a considerable distance. Carrying at the top of capacity is bad, even if two people are sharing the burden, because such an arrangement leaves no reserve for any emergency. Two girls might carry between them a 40-quart milk can which, full would weigh something over 100 pounds. If they do this they are using about all their strength and would have no reserve, and if one should make a misstep or stumble, the extra burden thrown on the other might result in a strain, because she would have no reserve to take care of the extra burden.

There is no question that women have neither the muscular reserve nor the muscular strength of men. Their entire muscular system is a different set-up made for lighter and less exacting work. They should not be pushed to the limit of their strength, nor should they lift or carry too heavy weights.

4. Safe Working Habits for Prevention of Accidents.

The most essential safety habits for women who undertake farm work are:

A. Conserve strength, particularly at first, by getting plenty of sleep and rest. If necessary, go to bed right after supper the first 2 weeks. A tired worker is more likely to have accidents, is more likely to catch cold or catch anything that is going. Your first war job is to conserve your strength and health. Nothing does so much for that as sleep. Do not undertake farm work without a doctor's certificate of physical fitness.

B. Learn to use your muscles correctly. Do not lift by bending your back and pulling with your arms. Squat down with back straight and pick up weights by straightening your leg and thigh muscles. Do any job you can by squatting and straightening

rather than by bending and straightening. Never try to do anything--stretching, pulling, lifting, etc.--that requires the utmost effort you can put out. That is the time you may do yourself harm. Learn to jump from low elevations, landing lightly on the ball of the foot with knees bent.

C. Wear suitable clothing. Do not wear shorts and halters. They are unsuitable from every angle. Overalls rolled to knees or cut off at knees, colored long-sleeved shirts (sleeves can be rolled up), shade hat or cap, sweater, raincoat (rubber or oilskin), and rubber boots, are essential for the variety of weather that may be encountered on any farm. Work often must be done in wet or rainy weather. Gloves and dark glasses are often useful, and a bandanna to cover nose and mouth during a very dusty job. When very hot and perspiring, do not cool off by sitting in a breeze. If you stop working under such conditions and cannot get a bath and a rub-down, put on a sweater till you are cool and dry.

D. Tools and machinery. When you are given a job that requires tools, find out how to use them properly. Always stand hand tools up against something. If they are left lying on the ground someone may step on them and hurt himself. Before you attempt to use any machine, get instructions, and be sure you understand them. Don't try to find out how to operate any machine by experimenting. Never make any adjustments on a machine with the engine running.

E. Animals must be treated firmly, gently, and quietly to get good results. Never shout or yell at them. Enter a horse's stall on the left side. Harness from the left side and watch out for the horse's heels. Milk cows on the right side. If you are not sure of your courage with loose cows, carry a light stick. Remember a loose cow with a young calf may be resentful of anyone's approach, so keep away from her unless tied up. Never trust any bull.

F. When going to a new place learn your way around. Remember where stairways are, where you step up or down.

5. What is the Treatment for Sunburn?

Everyone agrees that prevention of sunburn should be sought rather than treatment. Women and girls should be warned not to work, especially for the first few days, with short sleeves, or with too thin shirts, or with jersey shirts cut low in the neck, and not to go without hats even if they "always do" in their ordinary occupations.

Besides such precautions, an application of some of the creams that are also good treatment after burns will prevent the quick burning of the skin before it tans. Standard remedial ointments or 5-percent tannic acid jelly (the last-named stains clothing 2/) are good preventives. There are on the market many creams and lotions to induce tan and prevent burning, and a list of them is published by the Consumers' Research (July 1942). In general, creams have more base and are more lasting than lotions. A tube of cream can be carried in the pocket easily, a bottle of lotion less easily.

2/ For methods of removing stains see "Stain Removal From Fabrics: Home Methods," Farmers' Bulletin No. 1474, U. S. Dept. of Agriculture (page 10).

In case of a painful sunburn, tannic-acid jelly (5 percent), which comes in tubes or jars, probably gives as much relief as anything. Its drawback is that it stains clothes and bed linen 2/. Several standard ointments give relief also and do not stain. A wet dressing of baking soda or Epsom salts (dessert-spoonful in glass of water) is also relieving.

If the skin is blistered it should be kept covered with a sterile dressing over tannic acid jelly or an ointment, or wet dressings (which must not be allowed to dry out and stick to skin). If the burn is extensive or very bad, it would be advisable to see a doctor. If sterile dressings are not available, use clean, freshly ironed old cotton or linen cloths.

Sunstroke and heat exhaustion. Sunstroke may occur among farm workers from overexposure and exertion in the hot sun. The person suffering from sunstroke will probably have a headache, feel nauseated, and will develop a high temperature. Her skin will be hot and dry and her face very red. She should lie down at once in a cool place with her head a little higher than her body, and should be made cool, possibly through the application of cold water or water-soaked cloths to the head and body. Heat exhaustion might occur among farm workers who overexert themselves in intense heat inside, such as in the haymow during haying or in the silo treading ensilage. In these cases the worker will be very pale, perspire excessively, and her pulse may be very weak. She will need to be given stimulants, which is never done in the case of sunstroke, and be kept warm.3/

6. How To Care for Blisters, Cuts, Bee Stings, Insect Bites, and Poison Ivy.

Blisters. Prick with a needle that has been dipped in alcohol or held in the flame of a match to sterilize it. Prick on the outer rim of the blister and gently press fluid out. Do not break skin.

If use of the blistered part is likely to break skin, as when blister is in palm of hand, cover with sterile gauze taped on with adhesive. Keep covered till healed.

Cuts. Minor cuts should not be sucked with the mouth or washed in water. This also applies to a scrape. Apply any good disinfectant; 2 percent iodine or mercurochrome are two of the best known, but there are many others. Cover with sterile gauze or sterile bandage and keep covered till healed over.

Bee stings and insect bites. These are often quite painful and mildly poisonous. Do not scratch. If sting can be seen in the bite, pull it out. Applications of alcohol, or water with a little ammonia in it, may relieve stings. Witch hazel or calomine lotion may relieve bites. They will not last long unless they become infected by scratching. Cold applications are relieving. Mosquitoes or flies in a room may be killed by the use of a good insect spray.

Poison ivy. All farm workers should have poison ivy pointed out to them at once by their employers and should be warned of its danger. Hospitalization for a week or more may result from a bad case. Remember that one is much more susceptible when perspiring freely (with open pores), as in haying.

2/ For methods of removing stains see "Stain Removal From Fabrics: Home Methods," Farmers' Bulletin No. 1474, U. S. Dept. of Agriculture (page 10).

3/ The cause, symptoms, and treatment are given in greater detail in the American Red Cross First Aid Textbook. See 1940 reprint, p. 188.

If contact with ivy is suspected, bathe exposed parts as soon as possible with rubbing alcohol, using a sopping rather than rubbing motion. Then sop with a solution of one teaspoonful of chlorox in a glass of water (an even stronger solution is sometimes used on thick skins). A 5-percent solution of permanganate of potash is good but leaves dark-brown stains. Calomine lotion may help in mild cases. Remember there is no known cure for poison ivy and the intense itching and swelling can be very distressing. Learn to recognize this three-leafed vine and avoid it. Never burn it. The smoke is fully as poisonous as the leaves or stem and may close the victim's eyes completely. Poison ivy infection appears first as a faint rash; then small blisters develop and itch intensely. Do not scratch. It should be over in 1 or 2 weeks. Remember that prevention is better than cure. If no remedies such as alcohol or chlorox are available, wash exposed parts thoroughly with thick lather of brown soap (do not scrub with brush). It is well worth the few cents it costs to have alcohol, chlorox, and permanganate of potash crystals on hand. Five cents worth of the last named would last months.

7. Amount of Water To Drink and How Much Salt.

Water should be drunk freely, but not ice water. If a jug of water is carried to the field, workers should have their own cups and not drink out of the jug or a common cup. When workers perspire freely, they may use 1/8 to 1/4 teaspoonful of salt to each glass of drinking water to replace salt lost through perspiration. When working in intense heat the addition of a little raw oatmeal to the water makes it more refreshing and invigorating than plain water.

8. Care of the Feet.

The feet should be protected by clean, whole socks and comfortable low-heeled shoes. Workers should not go barefoot around the farm, as there is too much danger of stepping on a rusty nail or bit of machinery, or getting stone bruises. The feet should be bathed every day and nails kept closely trimmed.

9. How To Get the Most Out of a Few Minutes Rest.

It is difficult to say how frequently rest should be taken, because the variety of work on a farm may bring natural breaks in the work, when relaxation and rest will come from change of location, occupation, or position. If the work is continuous and steady, such as hoeing, cultivating, or weeding down very long rows, the amount of rest that should be taken would have to be dictated by the worker's condition. Generally speaking, 10 to 15 minutes in the middle of the morning and the middle of the afternoon is considered a desirable rest period in industry. In continuous farm work, two rest periods a day of 15 minutes each in addition to the lunch period might be plenty.

It is not always possible to set a definite amount of time for rest. When a worker feels so tired that she feels she must stop before going on with the work, she should do so. In farm work the muscular fatigue probably will cause a worker to pause for rest before any actual strain from overwork has developed.

The most rest can be obtained from a few minutes' pause in the work by lying flat on one's back, nothing under the head, and drawing the knees up enough to relax the tension of the back. Lying flat on one's back and raising the feet and resting them against a tree or fence or other object is also good. While taking this rest relax as completely as possible.

Ross - 5593

OFFICE OF WAR INFORMATION
OFFICE OF DEFENSE TRANSPORTATION

For Immediate Release
Tuesday, January 26, 1943

ODT-48

Employment of women to augment the dwindling manpower reserves of the transportation industries has moved forward perceptibly in recent months, Otto S. Beyer, Director of the Division of Transport Personnel, Office of Defense Transportation, announced today.

Mr. Beyer, several months ago, stated that the industries could employ at least 300,000 women and might find it necessary to do so before the war is over. Increases noted late in 1942 reveal that the number of women engaged in the transportation field is gradually but steadily moving toward that figure.

While jobs in transportation held by women remain primarily clerical, Mr. Beyer pointed out that the category is broadening as women take over posts as operators of rolling stock and in the shops, hangars, terminals and yards to release men for service in the armed forces. The industries are finding, he said, that women can be used satisfactorily in many occupations formerly filled by men and that their performance in jobs not usually considered "women's work" has won for them the regard of the concerns employing them as well as the respect of their fellow workers.

Greatest advancement in the employment of women has been in the trucking industry where an estimated 5,000 additional women were added between July and November. Although the number engaged as drivers is still relatively small, truck companies are using more and more women on light trucks and, in some instances, as drivers of tractor-trailers. Some concerns are also employing them as chief clerks, adjusters, interline clerks, rate clerks, safety department clerks, trucking dispatchers, time keepers and assistant terminal managers - all posts usually held by men.

Women comprise approximately one half of the new employees hired by intercity bus lines in the same three month period. While a large part of the increase is represented by additional clerical workers, women are gradually taking their place in the field as ticket sellers, information clerks and baggage agents.

About one-third of the new workers taken on by local transit concerns from July through November, were women. The woman street car conductor is no longer unusual. Several local transit companies are now training women as bus and street car operators. Large numbers of women in the industry are employed as clerical workers, but they are also being engaged as accident investigators, bench workers, cashiers, draftsmen, gatemen, ticket agents, ticket examiners and surveyors.

On the railroads of the country, the scope of women is expanding to include mechanics and mechanics' helpers; machinists and machinists' helpers; signal towermen, upholsterers, yard clerks, section hands and numerous other occupations. Although more women are employed by the railroads than in any other form of transportation, the percentage of women when compared to total number of employees is still very small. The jobs they do, however, are more varied than in any of the other industries. In point of numbers, clerical jobs predominate.

X-9212

Public warehousing showed a marked increase in the number of women employed in late 1942. Since most of the work in a warehouse plant is considered too heavy for women, practically all of the women employees are holding office jobs.

Because of the nature of the work, women in pipeline transportation so far have been restricted largely to the office. However, the number of women employees increased slightly late last year. This was also the case on the Great Lakes water carriers. Jobs open to women on the water to date have been for the most part clerical and stenographic, but a few companies employ them as cooks and maids on boats and barges, and occasionally a woman is reported to be serving as a boatman, a canalman or a lock keeper.

Almost half of the personnel of the airlines this year will be comprised of women, Mr. Bevor said. Reports from the industry show that women are now being employed as sheet metal workers, welders, riveters, radio mechanics, spark plug cleaners, machinist specialists and instrument repairmen. Early experiments with women as reservation clerks, control clerks, ticket agents, dispatch clerks, and passenger agents proved so successful that their use has been widely extended throughout the industry.

Ross--76437

OFFICE OF WAR INFORMATION

OFFICE OF DEFENSE TRANSPORTATION

For Immediate Release
Friday, March 19, 1943 ODT-158

Employers in the transportation industries are facing a serious replacement problem so that constant recruitment will be necessary through 1943 to maintain current employment levels, the conference of Womanpower in Transportation, sponsored in Washington by the Office of Defense Transportation, was told yesterday.

British **experience** with the employment of women in the transportation field also was outlined to the representatives of the industries, of labor, and of governmental agencies who attended the meeting.

Miss Dorothy Sells, chief of the Personnel Supply Section of ODT's Division of Transport Personnel, **who returned a few months ago from Great** Britain where she studied British utilization of women in the transportation industries, described the types of transportation work which women are doing in the British Isles. She told the conference that 120,000 women are now employed on the four main railroad lines operated by the London Transportation Board and that 90 per cent of all **conductors** on buses and street cars are women although British women so far have refused to operate local transit vehicles through the blackouts. The airways and truck lines also have employed a great many women, and women have taken their places in maintenance shops in great numbers.

Training programs have been established on a large scale, she said. Most of the training is being done by private employers although the Government has set up some training courses. Hours of work are long, and absenteeism is on the increase among both men and women.

The degree to which American transportation industries are employing women in an effort to offset manpower shortages was reflected in the report of Mrs. Helen Robison, chief of the Personnel Requirements Section, Division of Transport Personnel.

"In the eight-month period from May, 1942, to January 1943, employment increased from 2,512,000 to 2,634,000, and it can be assumed that the heavier burdens in store for transportation in 1943 will require even higher levels of employment in practically every transportation industry," Mrs. Robison told the conference. "Even if no expansion in employment were necessary or possible, transportation industries would still face a constant recruitment problem in order to replace workers who either quit or are discharged, who are separated from their jobs because of death, disability or retirement, or who are **inducted** into the armed forces.

X-12131

"We have estimated that there were about 120,000 women employed in for-hire transportation industries in September, 1942, and we have noted a steady upward trend in the employment of women in all branches of transportation. According to our reports, women are doing a good job in many transportation occupations which in peacetime have been considered 'men's jobs.' There have been, of course, a few reports of dissatisfaction, but on the whole transportation employers have commented very favorably on the work of their new women employees.

"While one railroad complained of the low efficiency of some women used as laborers, the same company reported enthusiastically on the good work of other women who were wives of railroad workers and who developed into competent shop helpers. While one local transit company complained that women sought vehicle operators' jobs only for the social contacts they could make, most companies are so pleased with women's performance in these jobs that they are planning to hire more women as operators. The commercial air lines have set the pace for employment of women in transportation and probably are close to employing one woman to every two men today. Although flight personnel is exclusively male, except for stewardesses, the air lines are now using women in every capacity in ticket offices, shops, hangars, and air fields.

"Other branches of transportation are still lagging considerably behind this record. While railroads employ a larger number of women than any other transportation industry, women constitute only about four per cent of all employees. The majority of women railroad employees are clerical workers, but women are very noticeable in many railroad shops today working as shopcraft helpers chiefly but also as boilermakers, machinists, electricians, and upholsterers.

"Women are also rendering satisfactory service as bridge and building mechanics, helpers, and apprentices as well as swelling the force of common laborers, stores laborers, and section and extra gang laborers. Negro women in the East and frequently Mexican women in the Southwest are often found in these laborers' jobs. The railroads still have to reach the peak of the last war when 100,000 women were employed, but we expect that peak will be reached and passed in 1943.

"The Pennsylvania Railroad, particularly, has made great strides in the employment of women. The number of occupations in which women were employed on this railroad doubled from September, 1942, to January, 1943, and the number of women in non-clerical jobs also increased very substantially. Railroads also have reported increased use of women in roundhouses, shops, and stores as well as the use of women in other types of jobs.

"The for-hire trucking industry employed about 50,000 women in January, which is nearly 10 per cent of the total personnel of the industry. However, only in rare instances have women been reported as drivers of trailer-trucks in over-the-road trucking, and only a few reports have been received of women driving small trucks in local service.

"In the local transit industry, about 94 per cent of the companies employed women in January, and the number of women employed has risen from about 8,800 in July, 1942, to 11,100 in January. There were 6,600 women employed in the intercity bus industry in January, 1943, as compared with about 4000 in July, 1942.

"The public warehousing and storage industry employed about 5,700 women in January as compared with 5,100 in July, 1942. In this industry, women have been employed almost exclusively in office work, except in frequent instances where they are engaged for highly seasonal unskilled work. The pipe lines, too, have never used women except in clerical office work, although a recent report indicated that women are being introduced into laboratory work for the first time in one company. Domestic water transportation has also offered very few opportunities to women, outside of office clerical work."

Mrs. Robison made the following additional points:

1. Even if no expansion in transportation employment occurs, employers are facing a replacement problem of very large proportions, and constant recruitment will be necessary if only to keep at current employment levels.

2. Labor requirements of for-hire transportation will necessitate an increase in employment by an additional 175,000 from January through October, 1943.

3. The need for women is greater in some areas than in others and the need is especially great in areas of concentrated war production where local facilities have become overtaxed as to housing, education, transportation, and other services and where it is most important to avoid further congestion and further shifting of personnel.

4. Job opportunities for women are greater in some branches of transportation than in others, but a great many opportunities for employment of women have yet to be explored in terms of suitability of employment, efficiency of female labor and problems to be solved in recruitment, training and adjustment of women to new fields and skills.

Ross: 76437

OFFICE OF WAR INFORMATION
OFFICE OF DEFENSE TRANSPORTATION

For Immediate Release
Monday, March 22, 1943 ODT-163

Representatives of labor unions in the transportation industries went on record as opposing any wage differential between men and women doing the same job as the two-day conference on "Womanpower in Transportation," sponsored by the Office of Defense Transportation, held its closing session in Washington.

While variations of opinion on the types of jobs women are capable of handling were expressed by labor leaders, trade union representatives were unanimous in their insistence that the employment of women to meet manpower shortages shall not be used as a means of reducing wage standards.

Unions in the local transit industry make no distinction between men and women members, union officials told the conference. Union agreements with the airlines also guarantee women the same wages and same benefits accorded men. In the trucking industry, union representatives said, women are accepted as union members with the distinct understanding that they be paid on a par with men workers. The railroad unions, too, insist on equal pay for equal work.

The labor leaders, however, did not agree on the extent to which women can be employed in the various industries. Railroad union officials declared there are many railroad occupations which are not adapted to women and questioned whether seniority rights of women hired by the roads to meet manpower shortages will interfere with the employment of men after the war. Union representatives for the trucking industry argued the wisdom of employing women as over-the-road drivers, although they told the conference that women are proving satisfactory for short hauls and in delivery service.

In local transit and on the airlines, union officials said, their organizations welcome women members, and no discrimination concerning the seniority of women employees is tolerated.

"We are eager for women, and particularly for women operators, in our organization," one spokesman for a local transit union said."Women are welcome in the industry and in the union as they have been for many years. Nor do we accept women members for the duration only. They are welcome for as long as they want to stay."

Another official of a local transit union pointed out the necessity for unions to establish a policy of equality not only among white men and white women but for Negro men and Negro women as well.

"Once women are admitted into industry, the only problems management can expect to face are the same problems that arise in regard to men," the official declared. "If the employment of women is to have any meaning, women must have equal work rights with men and the right to work along with men. Unless we give both men and women, regardless of race, employment on the basis that they are able-bodied citizens with the right to work, we will have sacrificed one of the basic principles of trade unionism."

X-12213

The airline unions have "built no fences around women," union representatives said. Requirements for women are the same as for men, and women are granted full seniority rights in all contracts. While there are no women pilots, women have been accepted into practically every airline job, and union spokesmen said they expect women to remain in large numbers in the industry after the war. The fact that women are preparing to stay in the industry, he said, is indicated by the large numbers of women applicants for apprentice training.

The responsibility of management for adequate training and supervision of women holding jobs on the railroads was stressed by union representatives who pointed out the physical dangers of many railroad occupations. Lack of natural mechanical skill, together with the need for long training periods, they said, automatically bar women from many of the mechanical jobs. Much concern also was expressed concerning the employment of women in railroad jobs on a permanent basis, and union officials discussed proposals for the temporary employment of women so that their work during the emergency period would not entitle them to seniority rights which, in turn, might interfere with the hiring of men after the war.

Spokesmen for governmental agencies discussed problems affecting the employment of women and methods for recruiting women.

Mrs. Clara M. Beyer, of the Division of Labor Standards, Department of Labor, pointed out that most Federal labor legislation affects all employed people rather than specific groups.

"Good industrial practice shows the need for standards of employment for men as well as women," she said. "State laws as they affect the employment of women are being relaxed where the industries have proved such relaxation necessary, and the pressure for the repeal of State labor laws is not nearly so great now as it was at the beginning of the war. The present tendency is to request relaxation only where such procedure has been found to be necessary."

Methods for the recruitment and replacement of women in transportation jobs were discussed by Glenn Brockway, of the Bureau of Replacement of the War Manpower Commission.

"Women should be selected for employment and training on a basis of equality with men," Mr. Brockway stated. "The only qualifications should be ability to do the job and to meet physical qualifications for the work. Women without children or with children over 14 years of age should be selected first, and every effort should be made to utilize local women who are available."

Philip Van Wyck, also of the War Manpower Commission, and Miss Cornelia Edge, of ODT, outlined training courses for new employees which have been made available to industry by the War Manpower Commission and the Office of Defense Transportation and urged the adoption of devices to adapt equipment for operation by women.

Miss Mary Anderson, of the Women's Bureau, Department of Labor, told the conference that the experience of her bureau had been that women can do almost any job that does not require heavy lifting. She stressed the importance of safe and sanitary working conditions for women and pointed out that oftentimes the improved conditions introduced into an industry as a result of the employment of women greatly facilitated the work of the men on similar jobs.

ADVANCE RELEASE

ADVANCE RELEASE: For Use After 12 Noon, E.W.T., Friday, April 9, 1943
Ross - 76437

OFFICE OF WAR INFORMATION
OFFICE OF DEFENSE TRANSPORTATION ODT-196

American transportation services are employing large numbers of women in a constantly growing variety of occupations, Miss Dorothy Sells of the Office of Defense Transportation, today told the Conference on War and Post-War Demands for Trained Workers.

Miss Sells, who is chief of the Personnel Supply Section of the ODT's Division of Transport Personnel, returned a few months ago from England where she studied the British utilization of women in the transportation industries. In addressing the two-day conference, now in session at Washington, she reviewed the British experience in hiring women for transportation jobs and told of the growing need and opportunity for American women in the transportation field.

"Almost from the beginning, it was recognized in Great Britain that the outcome of this war depended largely upon industrial production and transportation and that the womanpower of the nation would eventually have to be mobilized," she said. "Nearly 20 per cent of all employees on the four main railways and those engaged in local transit in the London area are now women. Women are employed somewhere in almost every type of transportation job except in those few which physical or other limitations render impracticable.

"Though the United States has not been so long at war, women have entered the field of transportation here, too, and the number is now rapidly increasing. The lastest available figures indicate thatat least 160,000 are engaged in the various transportation branches, and the variety of jobs for which women are wanted increases daily.

"There are openings for women in every branch of transportation, air, rail, motor, and in some cases, even in pipeline transportation. Owing to the demand for womanpower in wartime, the standard training period for many occupations has been reduced. It now varies according to the job, to the previous education and experience of the applicant and her individual capability. In many, the training is given on the job, and the trainee is paid during the training period. Some companies, too, pay trainees while they are in training school.

"The need for women in these or other categories is, of course, especially great in areas where war production is concentrated and where local housing, education, or transportation facilities have become so overtaxed that it is inadvisable to bring new families into the locality. As more and more men are inducted in the military services, however, the demand for women will grow in all areas and in all industries. The Division of Transport Personnel estimates that an additional 175,000 persons will be required between January and November, 1943, in all kinds of for-hire transportation. A considerable number of these new employees must be women. In fact, women constitute a major source from which workers of almost all kinds must now be drawn."

X-13413

Ross--76437

OFFICE OF WAR INFORMATION
OFFICE OF DEFENSE TRANSPORTATION

For Immediate Release
Monday, May 17, 1943

ODT-253

Greater employment of women and development of industry-wide training programs to meet critical manpower shortages of the Intercity Bus Industry were considered yesterday by the manpower committee for the industry and officials of the Office of Defense Transportation.

Loss of drivers, mechanics and other employees through Selective Service calls, and withdrawals for other reasons, threaten curtailment of the industry's services, the committee told ODT officials. The latest United States Employment Service survey of the industry, it was pointed out, shows that personnel needs of intercity buses will rise from 47,654 employees in March to an approximate 50,661 by September.

Already, women constitute about 15 per cent of the industry's total employment. While still predominantly engaged in clerical occupations, constantly growing numbers of women are being hired to fill operation and maintenance jobs, the committee member said. The advisability of breaking down some occupations was considered so that new recruits with only specialized mechanical training may be put to work on maintenance jobs under expert supervision, and it was agreed that a training committee be appointed to correlate training experiences within the industry. This committee, it was explained, will also study the extent to which bus companies have availed themselves of Government training facilities and will consider preparation of industry-wide training programs.

Otto S. Beyer, Director of the Division of Transport Personnel, ODT, who presided at the meeting, congratulated the industry on the self-help measures it has already employed to meet its manpower shortages.

"Our present waste of manpower is largely the result of turnover because of workers' transferring from one job to another," Mr. Beyer said. "This waste is a serious curtailment of the war effort, of which transportation is a most vital part. Every man now in a transportation job must realize it is his patriotic duty to stay on the job where he is realizing his highest skill."

Col. George Baker, of the Bureau of Selective Service, advised early preparation of Replacement Schedules to provide for the orderly withdrawal from the industry of men called to the armed forces.

Colonel Baker told the Intercity Bus representatives that practically every able-bodied man between the ages of 17 and 38 years will be classified 1A by the end of 1943. While some of these may be deferred for special reasons, he said, industry must be prepared to relinquish large numbers of present personnel to the armed forces.

X-15493

Extension of the War Manpower Commission's Employment Stabilization Program on a Nation-wide basis in the near future was explained by Leo Werts, assistant executive director of the WMC. Mr. Werts also urged greater utilization by the Intercity Bus Industry of the services of the United States Employment Service in recruiting new personnel.

Miss Dorothy Sells, Chief of the personnel supply section, of the Division of Transport Personnel, ODT, recounted the effectiveness of the employment of women in the bus industry in England. William J. Micheels, chief of the personnel training section, pointed out the need for "training and more training" to maintain required services of the industry, and outlined Federal training aids available to the industry.

Members of the committee present at the meeting were Ivan Bowen, R. T. Whiting, R. W. Budd, C. J. Schultz, A. W. Koehler, Clifford Graves, Manford Burleigh, Roy Hauer and Hunter Snead.

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SUMMARY - REPORT
INSTITUTE FOR SUPERVISORS OF WOMEN WORKERS
IN TRANSPORTATION
October 12, 13, 14, 1943
Hotel Shoreland
Chicago

CHAIRMAN - OTTO S. BEYER
Director, Division of Transport Personnel
OFFICE OF DEFENSE TRANSPORTATION
Washington, D. C.

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Vice Grand President, Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees

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FOREWORD

A total of 134 persons, of whom 92 were men and 42 women, registered with the Institute for Supervisors of Women Workers in Transportation. These persons represented 24 states, the District of Columbia, and Canada; 100 different transportation companies, nine branches of transportation, and six carriers' associations. They came from many parts of the United States, among them San Francisco, Denver, Cheyenne, Minneapolis, St. Paul, Omaha, San Antonio, Dallas, New Orleans, Atlanta, Jacksonville, Spartanburg, S.C., Washington, D.C., Philadelphia, New York, Boston, Rochester, Detroit, Cleveland, Kansas City, St. Louis and Chicago, as well as a number of other important cities.

The following tabulation shows the number of representatives by industry and by sex:

	Men	Women	Total
Airways	5	8	13
Carriers' Associations	5	1	6
Automotive Maintenance	4	0	4
Local Delivery	2	0	2
Local Transit	28	10	38
Intercity Busses	11	4	15
Railways	24	14	38
Taxicabs	8	2	10
Trucking	5	2	7
Waterways	0	1	1
	92	42	134

The following report consists of a series of summaries of addresses delivered by various speakers at the Institute for Supervisors of Women Workers in Transportation. Although these summaries have not been submitted to the various speakers for approval, it is believed that they contain the substance of what was said.

A manual, incorporating the specific ideas and suggestions contributed at this Institute, and including other pertinent matter, will be issued shortly by the Division of Transport Personnel.

Tuesday, October 12

Morning Session

* * * *

THE HUMAN ELEMENT IN WAR TRANSPORTATION

Otto S. Beyer
Director, Division of Transport Personnel
Office of Defense Transportation
Washington, D. C.

The purpose of this Institute is four-fold. First, it is to explore problems of recruiting, training, and supervising women in transportation jobs; second, to take advantage of the lessons learned by transportation companies which have been most successful in employing women; third, to indicate the rapidly expanding job-opportunities for women in transportation; and fourth, to give added stimulus to the wartime task of bringing additional thousands of women workers into the transportation industry.

The topic of my remarks, The Human Element in War Transportation, can hardly be called a restrictive one, including as it does the job problems of perhaps five million workers in rail, water, air, motor vehicle and pipeline transportation, besides such auxiliary services as storage, warehousing, freight forwarding, and automotive maintenance. About one-half of these are engaged in for-hire transportation and one-half in private transportation. This number represents a considerable increase over pre-war employment and is necessitated by a marked increase in freight and passenger traffic resulting chiefly from the war effort.

Perhaps it is appropriate to introduce my subject with some statistics of transportation accomplishment, which, though they can hardly be described as the human side of transportation, nevertheless have an important bearing in appraising this aspect. In 1942, Class I railroads exceeded the pre-war freight record of 447 billion revenue ton-miles (record of 1929), by 42.6 percent. The Association of American Railroads estimates that the railroads handled 18.1 percent more ton-miles of freight in the first eight months of 1943 than in the same period of 1942 (479.3 billion to 405.7 billion). The 1942 record in passenger miles exceeded the 1920 record of 46.8 billion miles, by 14.6 billion, making a record of 53.6 billion passenger miles for last year.

The local transit industry carried eighteen billion passengers in 1942, as compared with fourteen billion in 1941, or an increase of 28.6 percent. Preliminary reports show 17.5 percent more passengers in August 1943 than in August 1942.

In 1942 there was an increase of 76 percent in the number of passengers carried by Class I intercity busses over 1941. The increase in bus-miles was 22 percent and the increase in vehicle capacity was 24 percent, while the number of passengers carried in March 1943 increased 79.3 percent over March 1942.

Truck loadings were about 20 percent higher in the first four months of 1943 than in the same period of 1942. However, the percent of increase has gradually gone down. In August 1943 truck loadings were only 7.1 percent above the same month of 1942.

Ninety-two million gross tons of ore were transported by the Great Lakes water carriers in 1942. This represented an increase of 15 percent over the 1941 record. The total movement of all commodities on the Lakes for 1942 was about six percent greater than in 1941. Other inland water transportation services showed a slight decrease since the war started. Traffic carried by air lines, pipelines, motor cars and warehouses has also reached a peak during the years of 1942 and 1943.

In order to handle this traffic, there has, of course, been an increase in personnel, but that increase has not been proportionate to the increase in traffic. From July 1941 to July 1943 the number of for-hire transportation employees increased from 2,307,100 to 2,793,300; in round numbers, 400,000.

The largest increase in any one industry was 227,500 in railroads. For-hire trucking showed an increase of 50,000. The number of employees in local transit, intercity bus and warehousing increased substantially, and the personnel of the air lines also expanded greatly. As far as the future is concerned, it is estimated that there will be an increase of 61,900 persons in all the transportation industries for the year 1944.

The number of women in transportation in July 1943 was estimated at 225,000 or 8.1 percent of total employment, compared to 120,000 or 4.8 percent in September 1942. The number of women by industries for 1942 and 1943 was as follows:

	1942	1943	Percent Increase
Railroads	39,600	94,500	138.6
For-hire Trucking	42,900	57,000	32.9
Intercity Busses	4,100	9,400	129.3
Local Transit	8,900	15,500	74.2
Airlines	It is estimated that 1/3 of all employees are women		

What has been responsible for this amazing record of performance of domestic transportation? That such greatly increased volumes of traffic and personnel have been handled without a greater increase in manpower is in large part due to more effective utilization of both equipment and personnel. An increase in the working hours, modification of restrictive rules and practices, relaxation of State laws, the adaptation of transportation rules and practices to the employment of women, and many other changes have been made in order to facilitate the more effective utilization of the available labor supply. All of this could not have been accomplished without the hearty cooperation of Labor with Management and Government.

These increases in the number of workers employed, including many new and inexperienced women, naturally creates many human problems having to do with tradition, training, supervision, wages, rates, labor turnover, labor relations and community adjustments.

I am impressed with the fact that differences in people's capabilities due to their physical make-up, education, training and experience, have more bearing on fitness for a job than any so-called psychological differences between men and women. For instance gangs of Negro women track workers are employed within yard limits in Washington, D. C., who are unquestionably better fitted for doing that particular type of work than a good many men who are not accustomed to manual labor. Circumstances of this sort give added justifications for the belief that employment of women can furnish an even greater contribution toward solving the problems of labor shortages in transportation.

If transportation employment officers are willing to recruit women for jobs for which they are suited, not so much as women but as individuals, and if supervising officials will give careful consideration to the training and supervision of these women recruits, tens of thousands more will take their place in the trarsportation industry and so enable it to make its fullest possible contribution to the war effort. The importance of their effort needs no emphasis on my part when speaking to transportation people. But the very important part that women can play in transportation is not always realized, even by many transportation people themselves.

DISTINGUISHING FEATURES OF PERSONNEL ADMINISTRATION IN TRANSPORTATION

L. W. Horning
Vice President, Personnel
New York Central System
New York

No industry employs men and women in so great a variety of skills as the transportation industry. Instead of being housed under one roof as in a factory, these employees are scattered throughout many communities and even in foreign countries. Many of them work entirely alone or in small groups without direct supervision. Though this dispersion tends to develop individual initiative and self-reliance, it renders supervision difficult and necessitates strict rules in the interests of safety and uniformity of practices. It also results in an unusually large number of labor agreements.

Transportation differs from other industries also in that most of its branches are older and therefore the average age of its employees is higher. Since it is a public utility with nothing to sell but a service, a larger percentage of its employees meets and deals with the public than in most other industries. Because of this, and also because it is not confined within the borders of one state, the transportation industry is subjected to State and Federal legislation in more ways than non-transportation industries.

The secret of good relations between personnel and management in any industry is not hard to discover. The employer must like his employees and the employees must like their employer. And there are many ways of bringing this mutual liking about. From the standpoint of the executive, or manager, it boils down to determining: (1) what people should do, (2) what people can do, (3) what people will do - all of which is primarily a matter of human understanding and organization.

A common error is often made in adapting positions to men rather than training men to fill positions. First, the duties of a position must be determined; second, as much time and thought must be given to the selection of the right man to perform them as would be given to selecting the materials and equipment suitable for a specific job; third, if the individual selected has weaknesses, an effort should be made to overcome them through training and development. Also, employees should be prepared for promotion to higher positions.

The next step in successful employer-employee relations is training. Perhaps the one most important personnel task of all is training of workers and supervisors. Supervision of men and women requires as much technique as the running of a machine or following the procedures of a laboratory. If direction is sound it will result in improvement of the skills, habits and attitudes of employees. This, in turn, will result in greater productivity, better work, and more satisfactory human relations, which will mean better service and greater returns to the stockholders, the company, and the employees.

Though the railroad industry has pioneered in the promotion of certain personnel practices such as pension systems, hospitalization plans, and management-labor committees, it has sometimes failed in the modernization of its personnel policy. Now, more than ever before, women are entering the transportation industry, and personnel practices must be adapted to meet their requirements. Though some employers hesitate to employ women owing to their high turnover rate and the restrictions imposed by State laws, women are today doing hard work and they are doing it well.

The necessity for employment of women emphasizes the importance of modernization of employment practices with regard to all employees, both old and new, in order to keep up their morale.

Probably the ten most important factors in maintaining employee morale are:

1. Job security and employment stabilization
2. Compensation
3. Opportunity for advancement
4. Methods of handling grievances
5. Number of working hours and starting time
6. Vacations
7. Training of employees
8. Training of supervisors
9. Employee eating, lodging, rest, and toilet facilities
10. Recreational and social facilities

Employer-employee relations in our country have entered upon a new era. Those engaged in personnel administration should strive to make this new era one in which there will be developed a greater degree of respect and understanding of the problems of each by the other; an era of trust in the motives which prompt employers and employees; and a greater realization that all should work together for the benefit of the industry. Employees must be given to understand that they have a stake in their industry and its' management.

Around the table where we do our collective bargaining, workers and employers must maintain a sense of humor and cultivate the courage to recognize reality as well as the intelligence to deal with it. A sense of fair play must prevail and both parties must follow reason instead of yielding to emotion. Those engaged in personnel administration and collective bargaining must have both the courage to stand up for their own convictions and the ability to appreciate the other fellow's point of view. Unions, as they demand and receive more rights and privileges must accept more responsibility. They must have regard, not alone for the welfare of the employees they represent, but for the welfare of the employer and of the industry also.

Let us realize that a new world is being built about us and that we must therefore adjust our procedures to changing conditions.

CAN WOMEN MAKE THE GRADE IN MEN'S JOBS?

Margaret E. Fox
Board of Vocational Guidance and Placement Office
University of Chicago
Chicago

During the last World War, women made their first headway as a vital part of the labor supply. Today it can be said that there are few jobs of any kind that women are unable to do, and do well. It is now recognized that women equal and even surpass men in work which involves manipulative dexterity and speed, precision and accuracy, in the operation of light machinery and in inspection work. However, women are also being used effectively for other kinds of work. They are to be found in shipyards, on railroads, in lumber yards, in airplane factories and in practically every occupation of our industrial and civilian life; they operate all kinds of power machines, such as hydraulic presses, hack saws and turning lathes, and are doing many other jobs that had always been considered strictly men's work.

But to say that a given occupation is suitable for the employment of women is not to say that <u>any</u> woman can perform it. A great deal depends upon the attitude of the employer towards women workers. Selection, training and supervision of women are important. Most women are not accuainted with tools and machinery from childhood as are most men; neither are they as strong as men physically, and their emotional background is also different.

Women, therefore, require careful training before they can take over highly technical work. In this the Government and industry are cooperating, in offering a variety of training courses. Some training, however, needs to be done on the job. In this connection it should be recognized that adjustments and adaptations must be made to meet the physical limitations of women, such as the breaking down of operations, and installation of special mechanical aids such as hoisting apparatus, conveyors and other devices known to ingenious plant engineers. But these will be of little value unless there is competent and understanding supervision.

Very important, too, is the factor of morale. Women do not like to feel that they are mere substitutes; that since the end of our manpower supply has been reached we must find all kinds of substitutes, such as the lame, the halt, the blind, the aged, and women. Something happens to a woman's morale on the job when she is aware of this kind of reasoning.

According to the War Manpower Commission and the Bureau of Labor Statistics, the number of women in the labor supply increased in the United States from 13.3 million in April 1940 to 17.7 million in July 1943, or well over six million. It is estimated that the number of women in the labor force of the United States will increase by at least 900,000 during the period from July 1943 to July 1944.

It is obvious that where women have been used effectively, the jobs have been performed with no noticeable decrease either in quantity or quality of production. Therefore, to revert to the title of our discussion: CAN WOMEN MAKE THE GRADE IN TAKING OVER MEN'S JOBS?, the answer is definitely "YES"!

THE PART NEGRO WOMEN ARE PLAYING IN WAR TRANSPORTATION

Maudelle B. Bousfield
Women's Advisory Committee
War Manpower Commission
Chicago

There are no available figures showing the total number of Negro women employed in transportation. We do know, however, that many have been called to fill the jobs vacated by men entering the Armed Services or transferring to other war jobs.

Negro women are now employed in a variety of jobs ranging from the unskilled, such as cleaning and janitorial work, to the semi-skilled. A few also hold highly-skilled jobs.

Of the 22,000 women employed by one Eastern railroad, 4,225 are Negro women; of these 1,027 are coach cleaners; 825 section or extra gang men; 476 callers, loaders, and truckers; 41 carmen helpers; 20 machinists; 11 turntable operators; and 3 tool room attendants.

Visits to plants and letters from various transportation companies reveal that in the local transit industry, Negro women are used as car and bus cleaners and as helpers in shops. In several large municipalities they act as car or bus operators and conductors.

The inter-city bus industry employs them in various sections of the country, chiefly as cleaners and maids. The inland waterways, including the Great Lakes, employ them as cooks, waitresses, maids and stewardesses. A few are doing overhaul and repair work in the air lines.

One company, employing Negro women at filling stations servicing trucks, (in which capacity they must be able to maneuver the trucks around) finds their work satisfactory, and stresses the fact that they stick to their jobs and present no special problems in absenteeism or labor turnover.

Of course, it is true of Negro women, as it is true of women in general, that they have not as yet found their way into many skilled jobs in transportation, which has long been considered a man's industry. Negro women, and indeed all women, should be afforded opportunities to fill jobs where they are needed. They should be selected not so much on the basis of what they have done, but on the basis of what they can learn to do.

Wartime shortages of manpower have considerably increased opportunities for women in transportation. Much of the traditional resistance of transportation companies toward both white and Negro women has been overcome under the compulsion of a critical labor shortage.

An effort should be made to understand the attitude and problems of the Negro woman, and the effect of her home environment and living conditions upon her behavior as a worker. Living as wards of white people, as many Negroes have done for years, especially in the South, has not been conducive to the development of that sense of responsibility which is necessary if they are to become satisfactory employees of industry. Supervisors should also appreciate the fact that a fair hearing of grievances will usually prevent dissatisfaction on the part of Negro women, who seldom harbor ill-will.

SUITABLE WORK FOR WOMEN ON STEAM RAILROADS

Olive W. Dennis
Engineer of Service
Baltimore & Ohio Railroad
Baltimore

A survey of jobs suitable for women on steam railroads has just been completed by Miss Dorothy Sells and myself. We visited all departments of a particular road with which we were unfamiliar and therefore not influenced by considerations of seniority rights, working agreements or established procedure. This survey, coupled with the experience on my own road, lead me to the following observations:

In addition to jobs traditionally considered women's work, such as cleaners, laundresses, seamstresses and cooks, women have for some time been filling minor clerical positions on steam railroads.

More specialized office positions that require a knowledge of railroad procedure, as well as those requiring a knowledge of materials and parts, can also be filled by women after a period of instruction.

Women with the necessary education or professional training, are already proving successful as engineers, lawyers, accountants, decorators and dietitians.

In railroad shops women can handle many kinds of work as laborers and helpers, particularly if the job can be broken up so that they are given the lighter and less skilled work. In this type of work, physical stamina and endurance are more important than size. To serve as helpers to trained workers in the shop crafts and as operators on smaller machines, women need, in addition to brawn and training, intelligence and alertness. As a matter of fact, women have been found to have considerable manual dexterity and have learned to operate machines with speed and precision.

When material to be handled is heavy, women can be assisted by mechanical devices; tools and equipment can be adjusted to the special need of women, such as the handles of tools reduced in size to fit a woman's smaller grip, or the height of machines adjusted to small workers by the use of platforms, or the addition of a seat to make the work less arduous. A trained man can sometimes be used to set up the work on a number of machines for women to operate or guard.

In the shops we visited during our survey, we found that from a consideration of the work alone, disregarding other obstacles to their employment, women could be used as laborers for general cleaning and sweeping, for greasing and oiling, as tool room attendants for welding and in the operation of a wide variety of machines, as machinist's helpers, or even as machinists. For example, they can be used in the tool room of the machine shop; in the rod and link department of the locomotive back shop; in the wheel department; in the erecting shop; in the boiler shop; in the blacksmith shop; in the pattern shop; on section work; in freight houses; in the operating department, as well as in storehouses, coach yards, and roundhouses.

The important factor in the success or failure of women workers is the primary one of selection; that is, placing the woman with the proper physical qualifications and aptitudes in the proper job. Where that was done the foremen were enthusiastic in their praise of women's work regardless of the job.

A more complete report on the findings of our recent Survey will be made available by the Livision of Transport Personnel at a later date.

EFFECTIVE UTILIZATION OF WOMEN IN TRANSPORTATION

Dorothy Sells
Chief, Personnel Supply Section
Division of Transport Personnel
Office of Defense Transportation
Washington, D. C.

Effective utilization of women in the transportation industries hinges on four main points, all of which are matters of attitude, whether on part of the women workers themselves, their fellow workers, or their employers:

1. Both the men (including employers, supervisors and fellow workers), and the women workers, must start out with a cooperative attitude. For the men, this means that they must give the women a chance - a chance of employment and a chance to make good. Too often, when women, from any walk of life first come into new positions, the dice are loaded against them, either because the men with whom they must work are prejudiced against women working at all, or because they are afraid that the women may do so well as to eventually displace them. On the women's part, it means that they must assume a workmanlike rather than a social attitude in their workplace, and refuse to trade upon their sex.

2. Management must recognize that women, like men, are just people; that they have individual differences on the one hand, and group similarities on the other. In general, the approach of the average woman to her work is the opposite to that of men; for instance, a man will reach a conclusion step by logical step, while a woman will jump to a conclusion and then go back to see how she reached it. On the whole, there is a tendency to go to extremes on the subject of women, whether in industry or elsewhere. Yet for women to be utilized most effectively, it is necessary to steer a sensible middle course, neither treating them too easily nor expecting them to perform like men in all respects. Both the physical and psychological differences between men and women must be taken into consideration in all aspects of the employer-employee relationship. This does not mean, however, that women employees need be a nuisance. On the contrary, they have a unique and useful contribution to make in the deftness and lightness of their touch, their patience, their attention to detail, and in their ability to brighten and humanize the atmosphere around them so as to give new zest to their work and to their fellow workers.

3. Care must be taken when training women for jobs previously performed by men, to orient them properly so that they understand what they are doing, and why. They should also be instructed regarding the best approach both to their job and to those with whom they work. This is basic. Many women have failed to measure up in their jobs, not because they lacked the skill but because they were not taught how to behave while doing it.

4. Good shop discipline is essential to the self-respect of women workers. This does not mean that they should be treated in a stern or unfriendly manner; on the contrary, good discipline implies a friendly, if firm, attitude. They should be given to understand that punctuality and regular attendance at work are expected; that grievances and complaints are handled

through accepted channels; that during work hours employees are expected to work; that regulations are to be observed; and that special concessions are allowed only in exceptional instances. Insistence on firm discipline is especially important for that considerable number of women now in industrial employment who are unaccustomed to the requirements of business life.

The extent to which women are being utilized in transportation varies widely in the different branches of transportation, in the different companies in each branch of transportation, as well as in different parts of the country.

Figures compiled by the Office of Defense Transportation indicate that women constituted 18.3 percent of the total estimated employees in the intercity bus industry in July 1943, as compared with 10.6 percent in for-hire trucking, 9.4 percent in public warehousing, 6.8 percent in the railroad industry, 6.4 percent in local transit, 6.0 percent in pipeline transportation, 5.8 percent in inland water service, and 2.6 percent in Great Lakes water carriers. It should be noted that the percentages in the various branches of transportation are strongly influenced by the opportunity for clerical work in each particular branch, as office work is still women's main field of work.

An example of the variation in utilization of women within one industry is illustrated by the figures for railroads collected by the Interstate Commerce Commission. In July 1943, women constituted 12.5 percent of all employees on the Pennsylvania Railroad and 2.5 percent on the Norfolk and Western Railway. In between these extremes, was the Southern Pacific with women representing 10.9 percent of its total employees, the Union Pacific with women 10.1 percent of its employees, and the New York, New Haven and Hartford with 9 percent women. At the other pole, stood the Chesapeake and Ohio, and the Delaware, Lackawanna and Western, each with 3.4 percent, the Louisville & Nashville with 3.7 percent, and the St. Louis - San Francisco, and the Lehigh Valley, each with 3.9 percent of women out of the total employment.

The percentage of women employed in transportation in the different areas depends upon a number of different factors, perhaps the chief one being the total employment in war industries in that locality.

Afternoon Session

* * * *

WHAT IS THE JOB OF A SUPERVISOR OF WOMEN?

Paul A. Mertz
Formerly, Industrial Relations Manager
Sears Roebuck & Company
Chicago

The main subjects which may be included within the purview of a supervisor of women, if deemed advisable by the management, are: recruiting, selection, placement, training, follow-up on the job, transfer, promotion,

separation, absenteeism, turnover, and what is usually known as employee welfare work, including supervision of rest rooms, first-aid room, lunch facilities, recreation, housing, health, work clothes, and personal problems such as child care, shopping time and financial needs.

The principles underlying supervision of women are basically the same as those for men. The application of those principles is also the same providing that (a) the practices in handling men are correct, (b) it is recognized that sex difference is merely a matter of emphasis, except for a few psychological factors, and (c) individual differences of women are taken into consideration.

The basic differences between men and women which require emphasis in order to have good supervision are:

1. Women are more sensitive to surroundings and associates.

2. Women without previous industrial experience need much more orientation to their jobs. They need particularly to understand how their daily work fits into and is an important part of the total job.

3. Women are more likely to be influenced by their feelings (hunches or intuition) than by reason, especially in fields in which they are not oriented by training and experience.

4. A few women are somewhat handicapped at certain times of the month; their efficiency may be impaired, and accident-proneness may be increased. Some are likely to take sick leave.

5. Women are more likely to respond to requests than orders.

6. Women are generally more loyal, more painstaking of detail, more accurate, more stable in jobs, and better in personal contacts, than men.

7. Few women have physical strength equal to that of men, therefore, adjustments of machinery, tools, equipment, etc. must sometimes be made.

8. Some women prefer male supervision, if "fatherly."

9. Women are especially susceptible to praise and encouragement.

10. Women's life is more emotional than men's, therefore it should not be stirred up too much.

11. Women are especially jealous of their prerogatives, actual and imaginary, therefore favoritism should be avoided.

12. Women desire time for marketing, shopping, and beauty parlor appointments.

13. Women want to appear attractive even in working garb, therefore, they should have a hand in the selection or designing of work apparel.

14. Women work better when work is not piled up, so should be given a chance to complete units of work before replenishing supply.

15. Women hate to be patronized or treated as inferiors of men, it should, therefore be recognized that they have equal intelligence, and special abilities in many types of work.

16. Women generally excel in memory.

17. Women hate petty snooping or any semblance of spying on them, such as probing into their personal lives, restricting their liberty of expression, criticizing their manner of dress, or their "gab-fests."

The essence of good supervision of women, as of men, is keeping them in the frame of mind of wanting to work rather than being recuired to work. It is mainly then, a matter of following through to see that performance is commensurate with previous training. If there is direct male supervision, there is also need of a woman counselor, especially where groups are employed.

Training is inseparable from the function of supervision. Results are obtained through people, therefore, skill in imparting knowledge makes supervision less necessary. The training of the supervisor himself is therefore most important.

There should be a proper coordination of line and staff responsibilities and activities, so that line authority gives the orders. There should be only one "boss."

All activities should be planned and scheduled. A subordinate's error or failure should be charged to the supervisor.

A few DON'TS are:

1. Don't do subordinates' work for them, especially during training and job try-out.

2. Don't argue, be sarcastic, or display "temperament."

3. Don't fraternize nor isolate yourself from subordinates.

4. Be accessible but don't expect many employees to come to your office; go where they can see you; invite their comments.

5. Don't pretend to know what you don't.

6. Don't depend upon oral instructions; back up any oral instructions by printed or written word.

There is no such thing as mass supervision; the act of supervision is individual in character, even in a group.

Wednesday, October 13

Morning Session

* * * *

RECRUITMENT, SELECTION, AND PLACEMENT OF WOMEN

Edna J. Wood
Supervisor, Women's Division
Philadelphia Transportation Company
Philadelphia

When it became necessary to employ women to take the place of men lost to the industry, and to expand the service of the Philadelphia Transportation Company, the important question was how to recruit, select, and place these women.

After a careful study, a list of openings which might occur was made. This list included operators, loaders, station women, receivers, car cleaners, bus cleaners, shop workers, cashiers and laborers. The first replacements came in the car cleaning department. The job was analyzed from the standpoint of safety and physical requirements, and two hundred women between the ages of 35 and 50 who had no specific vocation were hired as car cleaners. The one requirement was that they should be able to read and write English. Surface car cleaners who are able to operate the cars in order to move them around the barn, are paid 5 cents more per hour than cleaners who do not operate the cars. Reports from the superintendents indicate that women are better at cleaning than most of the men are.

Recruiting of bus cleaners proved more difficult because it was necessary for them to learn to move the busses around the garage after they were cleaned. Women ranging from 21 to 45 years of age, 5 feet 3 inches tall, and not too light in weight, were selected for this job. An auto driver's license was preferred but not required. Since no more than 10 percent of the women had a license, the others had to be taught to drive. Women who showed any mechanical ability were gradually trained to be mechanic's helpers.

There are now 27 women doing shop work. Selection of these was based on mechanical experience or adaptability. The ages of women in this group range from 21 to 45 years. Weight varies, as some mechanical jobs require tall, heavy women while others do not. The shop jobs at present held by women include Grade B controller repairer, Grade D armature winder, commutator slotterer, Grade D machinist, Grade D drill press hand, assemblers, air equipment repairman helper, and Grade D air equipment repairman. As most of these jobs have four classifications, A, B, C, and D, the women may progress to the higher grades as vacancies and seniority permit.

There are also women loaders and station women. Loaders assist passengers on and off the trolleys, answer questions, and sometimes collect transfers. Station women on the Subway-Elevated platforms assist passengers in and out of trains. For this job women between the ages of 23 and 40, with a minimum height of 5 feet 4 inches and a weight of 125 pounds, (or 2½ pounds per inch) are preferred. They wear the operator's uniform, which gives them a trim look. This creates a good impression on the public.

Recruiting street car motorwomen and conductors proved the most difficult problem. However, restricting of gas allotments has now minimized the need for recruiting bus operators. An operator must pass the American Transit Association test, which requires answering 25 questions in 20 minutes, a mathematical test, and a medical examination. Experience with women motormen and conductors has thus far been very satisfactory.

The requirements for applicants for these jobs are: age, 23 to 40; minimum height, 5 feet 4 inches; weight, 125 pounds; eighth grade education. Women under 35 make the best operators. At least a height of 5 feet 4 inches is necessary because the cars are built so that a shorter person cannot reach the brakes nor see the road.

The course of instruction for conductors and motormen has been cut down from 30 to 21 days. When it was first decided to employ women conductors and motormen, so much publicity was given through newspapers, display advertisements, car cards and folders, that there were more applicants than could be accepted. Because training facilities were not ample to take care of them all, many were lost to the company. Since then recruitment has been more difficult.

An appeal to 200,000 homes by distribution of a leaflet, has brought little results. In a door-to-door canvass in one neighborhood it was found that many young mothers could not work because they had one or more small children. Though there are many nurseries in Philadelphia, most of them are open only from 7 a.m. to 7 p.m. This means that the nurseries are of little help because the hours in the transit industry are irregular.

Other advertising schemes that have been tried with good results are dash-signs on Subway-Elevated platforms and daily spot announcements on the radio. Not all applicants who pass the tests report for training, however, the main reason for this being family objection to this type of work. Sometimes the girls themselves become doubtful because they fear the irregular and indefinite working hours will interfere with family obligations. Some become fearful of the operation of the car after thinking about it. It is, therefore, necessary to keep both the women applicant and her family "sold" on the job. To meet family resistance, a folder telling about the importance of the job, its opportunities, the provision of free transportation, free medical and dental care, group insurance as well as other advantages, was given to each applicant to take home.

Many replacements have also been made by women from other departments. In fact employees already in the company are given first consideration in filling vacancies before any outside applicants are taken. As a result, 45 women in the company have been promoted to various new jobs.

From June 1 to September 30, 1943, 987 women were interviewed for the job of trainman. Of these, 746 had the necessary qualifications, and of these, 524 were requested to report. Only 458 actually reported. Of this number, 119 resigned and 53 were rejected. Altogether, 190 women completed the course and are already operating street cars, while 84 are now taking instruction.

Afternoon Session

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SPECIAL PROBLEMS INVOLVED IN TRAINING WOMEN AND THEIR INSTRUCTORS

K. H. Shaffer
General Manager, Employee Relations and Personnel Department
Standard Oil Company of California
San Francisco

Two years ago the Standard Oil Company of California employed less than 1,000 women out of a total employment of about 18,500. Practically all of these women previously worked in clerical and secretarial jobs. Today there are about 4,350 women, with no appreciable change in total employment, and the increase is almost entirely in jobs formerly performed by men, such as oil field pumper, gas gager, still fireman, barrel filler, spray painter, light truck driver and similar occupations.

The training processes have been developed considerably since the beginning because larger numbers of employees had to be trained in a much shorter period than before the war. Although it is probably an oversimplification, the special problems meriting extra attention in the training of women, have been reduced to five major points:

1. Women working in an entirely new field are often nervous and ill at ease. The instructor's first job, therefore, is to make them feel at home in their new environment. This is accomplished by simplifying the hiring process, by providing means of relaxing during the first day or so of training, and by breaking them into their jobs by stages.

2. Women do not necessarily lack in mechanical aptitude, but many of them do lack in mechanical familiarity. More time, therefore, has to be spent on fundamentals. Use of an aptitude test prior to placing women in mechanical work may indicate whether they are suitable for such work. The course of training may also have to be extended in order to allow time for more background instruction and safety training. Instructors can help women learn by restating incorrect answers so that they are correct answers, and then explaining the reasons for the change.

3. The instructor and supervisor must display a cooperative interest in helping the women adapt themselves to the work, as women often measure their likes and dislikes by the personalities with whom they work. The instructor needs to encourage women and show them how to do their work better and more easily in order to develop confidence and build morale. Women are more easily discouraged than men. They are also more incuisitive and less inclined to accept policies and instructions without being told why.

4. Effort must be made to make the work as dignified as possible and to show the worker respect and consideration. The instructor or foreman should not coddle women nor be "bossy", but he should recognize the women as being a worthy member of the team and an important factor in the output of the plant. Women often resent having the work made easier for them than for men. At the same time they tend to be reluctant about changing jobs once they have learned how to handle one job and feel at homein it. It should be explained to them why promotion is necessary in order to keep operations going.

5. Limitations on the physical strength of women must be considered. When assigning jobs the instructor should bear in mind the facts that women have less muscle per pound of weight than men, are usually lighter and shorter, and become fatigued more readily. The use of automatic lifting apparatus, barrel tipping devices, counter-balancing weights, longer wrenches, and other similar equipment help in adapting the work to the physical capacities of women.

In general, we have found that while women in industry react somewhat differently from men, in many jobs they are just as capable. If the main differences listed above are kept in mind, women will prove satisfactory workers. They are making an excellent contribution to the war effort in our industry.

PROBLEMS ARISING OUT OF SUPERVISING WOMEN ON THE JOB

A. G. Gebhard
Master Mechanic, Diesel and Electric Equipment
Illinois Central System
Chicago

For many years women have done railroad office work, sold tickets, and waited on tables. Now, because of the labor shortage, they have taken over other railroad jobs, such as those of car repairer, painter, machinist helper, electrical helper, engine wiper, yard and shop laborer, car cleaner, flagman, and many others, vacated by men. In about a year the Illinois Central Railroad has doubled the number of women workers until it now has approximately 2,800 women employees.

These new women have brought a fresh and a strengthening point of view to the railroads, but they have also brought a wide variety of problems in psychology and special personnel relations.

The "key" problem is the training of foremen to handle the new and unusual situations which arise when women are added to a force of men. To the important ability of managing men must now be added the considerably greater responsibility of managing inexperienced women. Each foreman must institute a special training program for the benefit of the women. Because women have different reactions, their training must be handled with extreme care. To grasp the viewpoint of his women employees whose backgrounds are apt to be different from those of men, the foreman himself must develop extra sympathy and understanding. In short, he must "grow up" and widen his own capacity for handling his job.

Another problem arises in connection with those provisions of labor agreements concerning seniority, merit, and ability, when assignments are made to specific jobs or when promotions are made. Assignment of male and female workers according to strict seniority may tend to entangle the weak with the strong, foregoing safety and endangering health. On the other hand, any deviation from seniority may produce a feeling of injustice and envy, thus causing even more trouble with women than it does with men. In

order to avoid ill feeling, women, and men too for that matter, should always be given full and careful explanation for decisions in matters of this kind. The object of such discussion would, of course, be to win their consent and agreement, for people are usually loyal to their own decisions.

Observation indicates that men usually make better work supervisors of women. A woman counselor can do much, however, towards easing the tension which is likely to arise between women and their male fellow workers, or between the women and management, when women are employed in unusual jobs. Nothing can weaken an organization more quickly than a feeling that favoritism is shown. A good supervisor will, therefore, display impartial interest and friendliness to all workers, giving encouragement and commendation whenever it is due.

When men work side by side with women, they too must adjust to a new environment. They must cultivate new habits of thought and speech, and this is not always easy. They must also become accustomed to the interested and accurate manner in which most women perform their duties. In some cases women master jobs, difficult even for men, more quickly than the men do, and they show considerable interest in the workmanship of the men with whom they work. Not all women are making good in all jobs, however. Some of them are less punctual over a long period than the men. Some women do not appreciate the importance of time when split-second operations are required. Some absent themselves from the job too often or delay the work by prolonged and idle conversation.

In spite of the temporary nature of their work, it is possible there may be a larger proportion of women employed in all industries, including railroads, after the war than there was before. On the whole, it will prove good for the industry to have an increased proportion of women workers. The Illinois Central is proud and pleased to have such a large number of women workers, regards them with deepest respect and sincere admiration, and is grateful for their services in this emergency.

Thursday, October 14

Morning Session

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SPECIAL PROBLEMS CONNECTED WITH EMPLOYMENT OF WOMEN:

WORK ADJUSTMENTS, ABSENTEEISM, LABOR TURNOVER AND STATE LAWS

Clay Watkins
Personnel Director
Central Greyhound Lines, Inc.
Cleveland

Work Adjustments

When placing women in what are known as men's jobs, a good principle to observe is that the job should be adjusted to the woman, not the woman to the job. There are five major respects in which women differ from men: (1) the average woman is several inches shorter than the average man; (2) the average woman has about one-half the lifting strength of the average man and about two-thirds of his pulling strength; a woman can usually lift about 35 percent of her weight; (3) the average woman tires more quickly than the average man; (4) the average woman has little mechanical experience or knowledge; (5) the average woman's feelings are more easily touched than those of men.

To meet these differences it is often necessary to make mechanical adjustments. When women drive busses the seats should be moved nearer to the clutch and brake, if possible, because of a woman's shorter legs. It is also advisable to arrange for a short rest period at mid-morning and mid-afternoon, where this is feasible. Great care should be taken to see that women workers understand the significance of what they are doing when performing mechanical tasks of any kind, and that they know the function of the different parts of the machine upon which they work, or of the tools that they use. In supervising women workers it is important to give them encouragement and to be as gentle as possible in criticizing their work.

Absenteeism

The first step in reducing absenteeism consists of analysis of the causes. The Public Health Service reports that women lose an average of 10.9 days per year from illness whereas men average only 7.5 days lost per year for the same reason. Reports from airplane factories on the west coast indicate that 95 percent of the absences among women were traced to illness and transportation difficulties. Illness alone was responsible for 75 percent of absenteeism among women and 70 percent among men. Illness or death of members of the family was responsible for an additional 12.5 percent of absenteeism for women and 8.5 percent for men, while transportation breakdown and failures of car-sharing plans accounted for another 12.5 percent of absenteeism for all workers. Household responsibilities constituted another cause of absenteeism among women, but to what extent is not known.

The causes suggest the treatment for dealing with absenteeism. Provision for medical assistance by the company, the establishment of a commissary department where food can be purchased, a barber shop, a beauty parlor, and a bank may help matters. Encouragement of safety practices by employees while at work as well as installation of safety devices, organization of child-care centers, recreation programs and car-sharing clubs, are other possible ways of reducing the absentee rate.

Preparation of suitable literature and posters dealing with the importance of regular work, improved working conditions, and part-time work schemes, are other measures which may be taken. A great deal can also be done to curb absenteeism by impressing each employee with the importance of his or her job at the time of the original interview.

Labor Turnover

Turnover figures covering four million women employees of war plants indicate that for every two women hired, one other woman quits. While the quitting rate of these women was 6.2 percent, that of nine million men was only 3 percent.

The reasons given by women for quitting work usually have to do with marriage or other family relationships. Reports show that women seldom quit on account of wages, but long hours, which interfere with household duties, is often a cause of dissatisfaction.

State Laws

More than half the states have laws governing women at work. These laws frequently set up a 48-hour week, require one day's rest in seven, prohibit night work, require adequate rest and meal periods, require proper safeguards for health and safety, or adaptation of hours of work and working conditions to the age and sex of the workers. (See bulletins of Office of Defense Transportation for summaries of State laws affecting Women and Minors.)

In most states it is possible to obtain temporary exemptions from night work laws if it can be shown that this is necessary for war production. It is well to consult your State Labor Director for information regarding the laws of your own State or for relief therefrom.

SAFETY MEASURES, WORK DISCIPLINE, WORK CLOTHES, WOMEN'S FACILITIES AND SHOPPING TIME

Vivian J. Burdette
Employment Supervisor, Washington, Virginia and
Maryland Coach Company, Inc.
Arlington

Safety Measures

Both men and women drivers of the Washington, Virginia and Maryland Coach Company, Inc. are required to attend a safety course, and the women fit into it without change or concessions. First they are shown how the various parts of a bus function and how to determine what is amiss when things don't go right, for instance, what is happening in the motor when they hear a carbon knock. For illustrative purposes we obtained an old Plymouth motor, which was set up in the class room. By using this it was possible to show new drivers why it is necessary to double clutch, what happens when you press the brake, and so on. This is especially helpful to the women, most of whom know little at the start, about the workings of a motor vehicle.

Safety students are also taught the importance of being in good physical condition and having a good mental attitude when taking a bus out on the road. In addition, drivers are informed about State laws, about the effect

of road conditions upon safety, and are impressed with their responsibility both to their passengers and to pedestrians. Films that deal with safe driving practices and with lubrication are also shown. We are now preparing a film showing the course of training used for our own girls. At the end of the course a short "yes-and-no" test is given. So far the women have made better marks than the men.

Though there are no statistics indicating the results of the safety program, there has been no more serious accident in the three months since this course has been given, than a bent fender. This excellent record must be due, at least in part, to our safety precautions.

Work Discipline

Thus far there has been no problem with regard to discipline. It seems that the best way to encourage good behaviour at work is to select with discrimination, train carefully, and take pains to keep up morale. If a mistake is made and an undesirable woman is employed, the best thing is to get rid of her at once before she influences the standards of the other girls.

Our procedure is to select from among the women applicants those who qualify as to experience and character, but preference is given to women who are feminine in appearance and bearing, because they will influence other women to apply. References are then investigated and likely candidates are introduced to the traffic men.

In our company men and women are treated alike in those phases of work where the sexes can normally be associated. Women are paid the same wages as men, and they have the same retirement benefits. The company also finds that its women drivers do as good work as the men.

Work Clothes

The matter of work clothes is always a touchy subject because in addition to practicality and appearance, the women's wishes have also to be considered. On the whole, the more simple the garments selected the better. For women mechanics a coverall, made of sturdy material, with trousers and blouse fastened together, and having a drop seat, has proved most practical. For bus drivers, slacks, a blouse and coat with bi-swing back, if possible, to allow free movement of arms, is most practical. In some climates it is necessary to provide dark, heavy-weight materials for winter, and light-colored and light-weight materials for summer, or, the winter skirt and blouse can be worn without the coat. The cap may be one of the overseas type, which is jaunty and becoming to most girls, or it may be one with a soft crown and a long visor to protect the eyes from sun. Shoes, of course, have low heels, substantial soles and toes. Though there is some prejudice against slacks on the part of men and a few women, experience seems to prove that on the whole they are better than skirts because they do not blow up and because they are most becoming to the greatest number of women.

Women's Facilities

Separate rest rooms and washing facilities must, of course, be provided for men and for women. In the South it will also be necessary to arrange separate rooms for colored and white people of each sex. In addition to adequate showers, wash basins, toilets, etc., the specifications for which are usually stipulated by State laws, it is necessary to have comfortable rest rooms for women drivers to use between runs. It is also advantageous when games and reading material can be supplied. And when women are used on night runs, sleeping arrangements should be provided for a few who may be unable to get home during the night.

Even more than with men, the kind of facilities that are provided for women appear to prove an important factor in keeping turnover at a minimum.

Shopping Time

Though we have not had to face this problem, it is often necessary to arrange the hours of work for women so that they can do their household shopping and attend to little personal things, like hair and nails; otherwise the result may be absenteeism and increased labor turnover.

CHILD CARE, HOUSING, HEALTH, RECREATION,
AND LOCAL TRANSPORTATION

Helen T. Bundy
Personnel Consultant for Women
Northwest Airlines, Inc.
St. Paul

Child Care

Women, especially between the ages of 18 and 40 years, are needed for war industries. But this is the group that normally has young children requiring constant care and supervision. The Federal Government has therefore recognized that the country and the local community have a responsibility toward the children of the women who are doing war work. To this end the Lanham Act provides for financial assistance to communities which have, or anticipate, problems in connection with the care of children of working mothers.

Federal funds for this purpose are administered by the Federal Works Agency through Mrs. Florence Kerr, Washington, D. C. and are allotted on the following bases:

1. Some agency normally charged with the care of children must make formal application for funds. This is usually the local Board of Education, the Welfare Board, the Office of Civilian Defense, or the Community Chest.

2. Applications must demonstrate:

   a. The need for added care beyond what the community can normally support.

   b. That the agency has a workable community plan, and that all local agencies concerned with child care will be included.

   c. That the community will support the plan with funds of its own.

These funds are normally allotted for services only, that is, for salaries of personnel. The facilities, equipment, and food must be provided from community sources.

Two main types of child care may be provided for with Lanham Act funds:

1. Nursery schools for children 2 to 5 years old, for 12 to 18 hours per day.

2. Extended day care for children of school age, before and after school, including meals.

The Minneapolis plan is set up under the Office of Civilian Defense. There is a counseling service which considers the whole problem of each mother applying for assistance, and works out a plan suitable both to the family and the industry. Most women prefer to make their own child care arrangements with a member of their family, but where this does not work out, the alternatives offered are: (1) nursery school; (2) extended day care as needed; (3) foster home; (4) foster day care; (5) boarding homes for mother and children, or a combination of the above.

Since most of these plans do not involve 24-hours-a-day care, industry must make certain concessions to working mothers, such, for example, as placing them on permanent day shifts.

Housing

There are several things which can be done to alleviate an acute housing shortage. These are:

1. Federal housing projects may be assigned to the use of employees belonging to a particular war industry.

2. A continuous Federal housing survey of available rooms, apartments, and houses may be instituted.

3. A housing division may be set up in the personnel office of the company concerned, with the functions of listing available facilities, referring or assigning employees to adequate quarters, making local surveys to discover available space, or persuading home owners to make rooms and apartments available for war workers.

The exact truth with regard to living conditions in a community should always be made known to prospective employees, and they should, if necessary, be persuaded to leave their families in their present homes until adequate housing has been found for them.

Health

State and Federal laws protect the health of women workers by limiting the hours of work, the amount of weight a woman may lift, and, in some states, by prohibiting night work and making rest periods mandatory. Management should also take every reasonable precaution to safeguard health.

Three fundamental precautions towards safeguarding health are:

1. Physical fitness for the job
2. Adequate diet
3. Adequate rest

Advice on the first point should be given by the medical department to the employment department, while on the second and third points the women themselves should be advised.

Women should also be given complete safety instructions, including proper headgear, eye protection, safety clothing, and skin protection against dermatitis and other industrial diseases. In any shop where cuts or burns are apt to occur, a first-aid room, with a nurse in attendance, should be provided.

Most pregnant women can continue to work for at least six months, but their work should be adjusted periodically. They should not be required to climb or to sit or stand in the same position for long periods. They should be allowed a rest period at mid-morning and mid-afternoon, and should have a hot meal at noon. A liberal sick-leave policy and hospitalization provision, are advantageous. Most women can return to work in three months after childbirth.

Recreation

It is essential for the health, efficiency and morale of war workers that they have recreation. Especially when a company has many new employees from out of town, it may be advisable to establish a company recreation program. This need not be a great financial burden. Included in the Northwest Airlines program are: bowling, archery, horseback riding, tennis, shuffle board, and volley ball. There is one company dance each month, arranged so that persons on each shift can attend in rotation, and there is one company picnic each season others being arranged by departments. There is also a band, an orchestra, a drama unit, and a choir. Overhead expenses are usually met by the company, while the cost of food and other personal expenses are paid for by the individual employee.

Local Transportation

Arranging staggered work hours where possible, organizing car clubs, and providing parking space, are the chief ways of helping to solve local transportation problems.

LABOR RELATIONSHIPS

B. G. Goble
Vice Grand President
Brotherhood of Railway and Steamship Clerks,
Freight Handlers, Express and Station Employees
Chicago

Wherever men work together, in transportation or any other industry, there is a human relationship, which in modern terminology is called "Labor Relations." If that relationship is one of sincere teamwork, those so associated operate together most efficiently. No business succeeds as well with unsatisfactory labor relations as it does where such relations are harmonious. Good labor relations contribute to high morale and good teamwork. In other words, good labor relations is good business.

The building and maintaining of congenial, cooperative attitudes and good human relations within the organization of an industry can be successfully achieved only when methods employed are the kind that stimulate better emotions in the employees, create confidence, and remove distrust. Like any other relationship, labor relations need cultivation. Good labor relationship does not "just happen." This is a field different from all other fields in business. Here we deal not with physical material which can be scientifically measured, but with human beings subject to varying emotions.

As George Harrison, the president of our organization, has so aptly put it, "You can pile all the gold possible in the cab of the finest locomotive on wheels and without the touch of the human hand on the throttle, the locomotive will not move one inch."

Labor relations policies should stem from top management. They must be based on fundamental sincerity, and should be expressed in clearly stated policies that are both sound and practicable. There must be a thorough understanding and uniform application of the policies by subordinates. There should be absolute square dealing in everyday application of these policies by every individual who directs the work of others. Sincerity and fairness should be the watchwords in labor relations.

Men who are given responsibility of leadership over others must be trained in the art of dealing properly with employees in line with labor agreements. Supervisors and employees should not be required to learn the hard way, that is to say, the way by which each supervisor learns for himself, because this results in confusion, misunderstanding and dissatisfaction.

The augmentation of rapidly diminishing labor forces with women workers, impresses us the more forcefully with the necessity for good labor relations. There should be no discrimination against women employees. They should receive the same wages as are paid to men for the same class of work. Their working conditions should be healthful and fitted to their needs. They should be employed on jobs they are qualified to handle and trained to do. Over the years women have been employed mostly for office work, such as stenographers, machine operators, clerks, and telephone operators, but as the supply of male workers decreased, management has been forced to let women do other jobs, including those requiring the ability to lift. However, the lifting capacity of women is limited. The officer in charge should, therefore,

utilize his past experience and turn to the making of job classifications that fit the job to the employee instead of the employee to the job.

In these days many women are doing men's work. We find them even in the steel industry - the heaviest of all. Women work at open hearths and alongside blast furnaces, tear down and rebuild steel furnaces, work as section hands, freight truckers, mail handlers, janitors, and laborers.

When women are employed there should be a considerate and orderly hiring procedure, under the supervision of a trained officer or supervisor capable of fitting the kind of work for which the employee is best fitted by her physical and mental capabilities, so that she will be producing at best for the management, without undue strain on herself.

Again, trained supervisors of women know that some women will cry under stresses that would ordinarily cause male workers to curse, such as when the work is not going right, or a supervisor is unduly critical. Problems of women workers not related to their duties, such as child care or housing, also need consideration. Supervisors are sometimes required to fill the roll of advisors on pregnancy and marriage problems, therefore women supervisors are preferable. Women called upon to do this work should have special training.

In order to reduce labor turnover, management should provide adequate wash-room and medical facilities to meet the needs of women employees. Time and study given to problems of this kind will also reduce absenteeism and tend to eliminate investigations under disciplinary rules.

In searching for panaceas for keeping the vitality of the worker high, rest periods of fifteen minutes in the middle of the forenoon and also in the afternoon have proved to be most helpful.

It has been found that if a woman alternates between sitting and standing while she works, her muscular ability will be increased from 6 percent to 15 percent. This is an especially valuable practice since a woman has one and one-half million fewer red corpuscles per cubic milimeter than a man. Since the red corpuscles carry oxygen, women overcome muscular fatigue much more slowly than men. Fatigue decreases efficiency and productivity. Errors then creep in, accidents increase, discipline raises its ugly head, and the procedure set out in working agreements has to be followed in an attempt to correct the errors and reduce the accidents. Night work and split shifts ordinarily increase fatigue, therefore, as few women as possible should work on these shifts.

Agreements should be negotiated between management and unions covering leaves of absence for pregnant women, specifying the number of months which can be taken before and after childbirth. This would ease the minds of the women employees about the loss of their positions and remove the fear that the pregnant condition would be discovered. Management should face these problems squarely. Proper literature should be furnished on the subject, and if classes approved by local health and medical authorities were arranged, it would be a fine contribution toward solving such problems.

Afternoon Session

Reports of Industry Groups:

REPORT OF THE RAILROAD GROUP
Richard W. Hall
Chief of Personnel
Boston & Maine Railroad
Boston
and
J.Y. McLean
Director of Labor Relations
Chicago, Rock Island & Pacific Railway Co.
Chicago

The railroad group was attended by representatives from twenty-six railroads, the Association of American Railroads and the Inland Waterways Corporation.

All of the roads reporting used women to a large extent in clerical and general office work, but they varied greatly with respect to other jobs in which women had been placed. The range of women's jobs did not follow any geographical pattern, since some roads in each section of the country employed a considerable number of women while others employed relatively few. The extent to which women are utilized appears rather to be a matter of individual initiative, affected appreciably by local conditions such as State laws, and the attitude of organizations or persons towards employment of women.

Laws regulating the hours of women for example, differ by states, some states restricting service to a given number of hours a week, some specifying the number of hours per day, and some specifying where women may work, or the type of work women may do, so that they are not always available for work on the shift that would normally be assigned to them according to seniority.

As to the local difficulties arising from restrictive State legislation, it was the sense of the railroad group that the Association of American Railroads should circularize the roads in an attempt to get concrete instances of restrictions, that is to say, concrete examples of the effects of these laws upon employment of women.

With regard to selection of women it was agreed that the basic qualifications for women in industry are strength, stamina and emotional stability. If a woman has these three qualities and is reasonably intelligent, she can be taught to function in almost any job with a satisfactory degree of efficiency.

Women cannot generally be employed on jobs that require very heavy physical lifting, however. Neither do they take kindly to jobs that involve any considerable degree of messiness, although that attitude can be educated away.

The best age for women workers will depend on the jobs to be performed, but generally speaking, women between 25 and 40, without minor children, are the most satisfactory.

Of prime importance is the intelligence with which women are chosen for a given job. Also important is follow-up on placements, to see if the employee is developing satisfactorily.

A supervisor of women, in railroad or any other work, should first recognize the woman worker as an individual. He should be frank about the job that is to be done. He should be interested in her point of view, give her an opportunity to express an opinion, and listen sympathetically to complaints, real or fancied. His attitude should be objective, fair, and impartial in the treatment of all employees. He should be articulate, and interesting in explaining the job and how it ties in with the whole fabric of production. If criticism is necessary, it should be impersonal, dwelling on the general effect of the error rather than on the error itself. He should keep in mind that women are working because of their patriotism, and that it is not simply a matter of women adapting themselves to new types of work, but also of industry adapting its methods to the employment of women.

It was agreed that most of the railroads need to be educated with regard to changing conditions and methods. They should become cognizant of the sources from which labor can be recruited and the proper way to use these sources. This is true even of those roads that have pioneered in the effective use of women and have already done wonderful work. Until this education is completed they are hardly in a strong position to complain of handicaps which they have done little to overcome. The correction of this condition is a matter for individual management to consider.

A program of education should be promoted by Government, the Association of American Railroads, and the railroads themselves, through study and intelligent effort. Other roads could then profit by the example of these roads that had the foresight, the energy and the courage to pioneer.

The Group recommended that the Association of American Railroads should get from each road the story of local conditions; not a mere summary of the laws, but a statement of concrete examples showing how local conditions affect the employment of women. They might also ask for a statement of the steps which each road has taken to overcome its local difficulties. The reports should be summarized and distributed to each road so that all could benefit from this experience.

REPORT OF THE AIRWAY GROUP

R. F. Ahrens
Director of Personnel
United Air Lines Transport Corporation
Chicago

In the past very few companies have developed the proper employer-employee relationship for effective utilization of manpower, to say nothing of womanpower. Due primarily to dire necessity, however, our emphasis must now be placed upon womanpower.

What has industry done to develop a consciousness that the employee is a very important partner in getting any job done? We hear a great deal about job-management training, training within industry, and job-instructor training, but what has been done heretofore, to train the employees? What has been done to up-grade them, to help develop supervisors, to maintain an accurate record of progress, to transfer workers to jobs for which they are better suited, or to lend a sympathetic hand when personal problems bear down upon the individual? Except in a very minor and general way nothing very much has been done.

We now find ourselves in a serious emergency where our fighting forces as well as our industrial forces must exert every effort to the fullest extent if we are to survive. Success depends to a large extent on the full utilization of womanpower. All over the country the question is asked: "How are we going to do this and that with so many women?" One of the answers for all industries is to begin immediately to do some of the things we should have done for all our employees many years ago. The responsibility of management is no different now simply because women are being taken on to fill their husband's, brother's, and father's shoes.

Since December 7, 1941, the air line industry has gradually increased its number of women from 10 percent to its present approximate average of 34 percent. During this period the total number of workers has more than doubled because it was realized that the job could not be done unless women were employed to replace the men leaving for the armed forces and to take the many other jobs which the war necessitated. Up to this time the industry was not sympathetic to employment of women except as stewardesses, so this sudden increase in their number required ingenuity in persuading the supervisory personnel that from now on women must replace men as mechanics, as mechanics' helpers, as project workers, as instructors, as procurement representatives, and as public relation personnel; in short, in virtually every classification except that of flight personnel. This was accomplished rather quickly and effectively, however. Many of the old line supervisors now volunteer substantiating evidence that women employees are doing outstanding work and turning out quality production, notwithstanding the facts that the jobs are new to them, that they are not accustomed to the new surroundings, and that they do not have the previous knowledge of industry, which most men obtain through their normal contacts.

Women, like all employees, require training. Once they are exposed to the know-how they slip into the scheme of things rapidly with energy and enthusiasm. Pre-job instruction plus on-the-job training will whip many existing problems in the employment of women as they would have done had they been put into effect when men were employed.

The air lines have established nursery schools where children can be cared for while their mothers are at work serving their country. For further assistance in making necessary adjustments to new situations and strange environments, and for proper introduction into industry, a woman counseling program has been established by United Air Lines. This program is effective in increasing efficiency and attention to the job. Wives of men in military service are granted 7 to 30 days leave of absence without loss of seniority. This encourages the wife to return to the job when her husband leaves for over-seas or for an assignment of long duration. Women have indicated their desire and proved their ability to assume responsibility, consequently as they progressed in their work, many have upgraded into supervisory classifications.

Women have been encouraged to become, and to feel that they are, a part of the air lines organization, also to participate in employee training programs, in home training studies, and in suggestion conferences. Thus ideas for improvement within the organization, such as short cuts to production and team-play, are passed along from employees to management.

Virtually all air lines were quick to recognize that unusual problems would arise with employment of women, and equally quick to overcome them. This attitude has expedited the assimilation of women employees. Air lines are thus enabled to assume the dual responsibility of discharging domestic obligations as well as participating in military operations.

In solving personnel problems the air lines have realized that what has been done for the new women workers should have been done for all employees in the past.

REPORT OF THE TRUCKING INDUSTRY GROUP

Jack R. Lewis
Director, Department of Safety and Personnel
Davidson Transfer and Storage Company
Baltimore

Women may be recruited by various means: (1) utilizing classified advertising in local papers; (2) soliciting the aid of employees by asking them to recommend to their friends the advantages of holding an essential position in trucking; (3) calling upon the local offices of the United States Employment Service for recruits. This requires furnishing the United States Employment Service with the necessary information, viz., types of positions open to women, starting rate, and mental and physical requirements.

There should be an initial interview of applicants by a female personnel interviewer, who should study both the application and the applicant, including her background, physical condition, and the types of work she prefers. Some of the questions which the interviewer must ask with regard to each applicant are: Does her mental and physical history indicate that she is a suitable person for the job she wishes? Is this job available to her? Does her husband work? If so, is he on a night or day shift? If she has minor children, what provisions has she made for their care? Satisfactory answers to these questions may avoid labor turnover.

It is important that the interviewer should be thoroughly familiar with the job she is assigning workers to do. She must know the job-methods that apply and check on them previous to determining whether the applicant fits the pattern that has been successful in that particular job. She must also be able to describe the job fully to the applicant without either overselling it or underestimating its importance. If the interviewer has been honest in

her description of the job and the applicant likes the description, half the battle is won, because the applicant will meet the job with the right mental attitude.

The interviewer should be responsible for introducing the new worker to her foreman, and should do it in the same manner as she would introduce a new acquaintance. The foreman is working under trying conditions, such as stepped-up production, training new workers because of a turnover in labor, and other causes. The new worker probably feels ill at ease in the presence of the foreman. They should both be started off on the right foot.

Be sure, too, that your foreman is familiar with the content of "Job Instructions Training", "Job Methods Training", and "Job Relations Training." Let us substitute for the words of the TWI (Training Within Industry) slogan: "If the worker hasn't learned, the foreman hasn't taught."

Opinion is divided as to the efficiency of women supervisors compared with men supervisors. Some people believe that women workers resent taking orders from women supervisors. It is their belief that women workers will carry out instructions issued by male supervisors in a more satisfactory manner. All agree, however, that supervisors of women must be tactful, sympathetic and impartial, have a thorough knowledge of the job, and use diplomacy. They must have personality.

Absenteeism and labor turnover are related in that they are usually brought about by home conditions, such as illness of another member of the family or necessity for caring for a child. Absentee records should be kept as a means of determining the causes and dealing with them. It may be that a transportation problem, which can be solved by the Personnel Department, is the cause of the employee's absence from her work, or, perhaps, it may be the inability of the mother to locate a suitable care-center for her child that keeps her at home. In this case, too, she can be assisted by the Personnel Department. Domestic duties and child-care are frequent causes of labor turnover among women.

It is well to bear in mind that women are different from men not only physically but mentally. However, men supervisors should not feel that they must coddle women, because women do not want special favors. If supervisors continue to show women preference, women may not only expect this unwarranted consideration, but demand it. Normally they do not expect special concessions simply because they are women. What they want is to be trained, taught, given equal wages, their share of consideration (no more and no less), and their share of praise for joining the ranks of industrial workers who are helping to bring this war to a speedy and successful conclusion.

REPORT OF THE TAXICAB INDUSTRY GROUP

Daniel Sherby
Director, Cab Research Bureau, Inc.
Cleveland

It has been established more firmly than ever that taxicab transportation is an important part of the Nation-wide transportation system because it provides feeder lines to trains, buses, air lines, and steamships. Like all other branches of transportation, it has attempted to solve the problem of the manpower shortage by putting women into jobs formerly held by men.

A recent national survey of 3,854 cab companies revealed that on September 1, 1943, 20.5 percent of their total number of drivers were women, 80 percent of whom were married. It was the consensus of opinion that the best female driver was one who was married and whose husband was in the armed forces. Of the supervisors of women, 7.7 percent were females.

These firms recruited women through classified advertisements, radio announcements, and displays. Only a few operators took advantage of the assistance which Government agencies can render in a labor crisis.

In recruiting women, the supervisor of personnel should seriously consider the matter of age. The most satisfactory age for women as taxicab drivers is between 25 and 45 years. In addition to age, physical stamina should be considered.

Because the mobility of the job precludes constant supervision, it is important to select a reliable, dependable woman with good morals. A rigid check with former employers, local police, and neighbors is advisable. If there is a single doubt about the applicant, she should not be hired. One person with bad habits might force the reputable women drivers from the industry.

The taxicab industry should make the job as attractive as possible to women, since taxicab driving has not yet been entirely accepted as a suitable job for them. It should be impressed upon women and their families, as well as the public, that this is patriotic work.

The uniforms should be attractive as well as practical. It has been found that slacks, a semi-military jacket, and a military-type cap are smart and becoming to the female driver, as well as pleasing to the public. Special installations for the health and hygiene of female employees should be made at the garage headquarters in order that women may have a place in which to rest.

There is a great deal of difference between commercial and private driving. A driving license does not necessarily indicate a good driver. The training period should be for a reasonable length of time, and a driving test should be given. A three-day period of training for women drivers is advisable. During that time a woman could be taught the geography of the city, location of the principal buildings and railroad terminals, the customary rules of the organization, and how she can operate her cab most

profitably for herself and for the company. It is also suggested that a woman applicant be given practical experience during the training period in the presence of an experienced teacher, preferably a woman, in order to dispel any fear of her new job.

The personnel supervisor should have at least a high school education. He or she should have a natural aptitude for the selection of people, the gift of sound reasoning, and the ability to keep a sufficient force of men and women operating at the highest degree of efficiency. As to whether men or women are best suited to supervise women, there are two schools of thought. A woman is perhaps less apt to overlook mistakes in performance that might end in disaster than a man, who is traditionally chivalrous toward women. Although absenteeism is usually considered a major problem in employing women drivers, an analysis shows that 62.25 percent of the reporting members found no difference between men and women in absenteeism. The survey indicated that the chief reasons for the absence of women from their jobs were sickness, household duties, weather, and that some did not need the money.

The survey disclosed that 88 percent of the operators found no difference in the labor turnover between men and women. It ran generally between 12 percent and 50 percent. It was feared that women drivers would greatly increase accidents, but the survey revealed that 53.84 percent of the reporting members found that women are on a par with men, 26.15 percent reported that they are safer drivers, and only 15.38 percent stated that they are more prone to accidents than men, while 4.62 percent failed to answer this question.

A comparison of the performance of 82 women and 82 men taxicab drivers in a large midwestern city showed the following results:

	Women Drivers	Men Drivers
Married	58.5 percent	86 percent
Single	41 "	14 "
Average age	30½ years	35 years
Average daily booking	$11.25	$16.45
Average daily commission	$ 4.78	$ 7.42
Average number of days worked per week	5	4½

It should be noted that the men work ten hours a day and the women only eight hours; thus men work 25 percent more time daily than the women. A larger percentage of men work on the night shift, which is generally more productive, while women work only on the day shift. These facts account for the apparent 20 percent greater productivity for men.

Contrary to expectation, it was found that the association between men and women drivers is wholesome, and that the men are eager to be helpful to the women drivers. Occasionally cliques were formed and difficult situations developed, but the individual female driver causes no trouble because of her association with men drivers.

Women have also been employed satisfactorily in other work, such as that of dispatchers, starters, and repair work. Although this work requires great precision, women are found to be more adept at it even than the men who preceded them. It would be to the advantage of the employers to supply tools especially adaptable for the use of women.

REPORT OF LOCAL TRANSIT DISCUSSION GROUP

J. C. Baine, Jr.
General Superintendent, Railway Department
New Orleans Public Service, Inc.
New Orleans

The local transit industry is proud of its accomplishments to date in the successful use of women as replacements for men. While the industry average, according to the July figures, shows only a percentage of 6.4 for women employees in relation to total employment, this figure is increasing daily and certain properties in critical labor shortage areas have averages of from 20 percent to almost 40 percent. If the enthusiasm and apparent open-mindedness of our discussion group are any measure, we can foresee a rapid increase in the utilization of women by the transit industry. It is the general feeling that there is practically no limit to the extent to which women can be utilized. Instead, the real problem is: "Can we get the needed women recruits?"

It is not so much getting the initial recruits as filling additional needs that is the real problem, and we must face that fact. It is evident that ways and means must be found to attract more women to our industry. This will require all the ingenuity the industry can mobilize plus the assistance of governmental manpower agencies. In this connection, let me cite a conversation which I had with one of our women conductors. When asked how she liked her job, she replied, "It is a swell job, and certainly a lot better than washing dishes." Perhaps, then, if women like such jobs better than washing dishes, all we need to do is to find some other method of getting the dishes washed, and we can then tap the pool of housewives!

Approximately 60 percent of the total personnel in local transit is vehicle operators. While this particular job is well suited to women, it does not lend itself to re-engineering, like the several jobs in the oil industry. It would simplify matters greatly, for example, if we could install automatic transmissions in all our busses, or hydraulic steering, and the like, but this is not possible under present conditions.

In addition, we must remember that the woman operator is more or less "on her own." She does not have the advantage of direct and continuous supervision. At the same time, she has the responsibility for efficient operation and the safety of large numbers of people. Consequently, local transit companies cannot afford to accept just any female "Tom, Dick and

Harry" for this work. And while we realize that it is impossible to maintain former standards, we must be very careful in selecting women for work which involves the safety of the public. This naturally complicates the problem of recruiting women in local transit.

With respect to the training of women, discussion by our group indicates that it is substantially the same as the training of men. There are, however, three points which require emphasis in the training of women as operating personnel. These are: (1) A clear explanation must be given about the mechanical functions of the equipment, as women do not seem to have the same inherent knowledge of mechanics that men do. (2) The meaning and importance of maintaining a schedule in the operation of a local transit system must be carefully explained. (3) A real consciousness of the extent and variety of street traffic hazards must be instilled. Women must be taught to recognize potential hazards as they operate along the several bus routes, and, in street car operation, they must learn to appreciate the fact that the vehicle is being operated on fixed rails, and that it cannot be maneuvered like a private automobile.

On the credit side we find: (1) Women drivers have a favorable safety record even under the present difficult conditions. Figures brought out in the discussion showed that women had from 12 percent to 36 percent fewer accidents than men with similar experience. The ability of women to operate the vehicles more smoothly contributes greatly to this favorable record. (2) Women are accurate in handling and recording fares. (3) Women are accepted wholeheartedly by the general public. This is reflected in the relatively few formal complaints received by operating companies. (4) In general, women "hold their own" in maintaining established schedules. However, under certain conditions it has been found necessary to make some adjustments on items such as layover time.

On the debit side we find: (1) Women have a higher frequency rate in industrial accidents, of which the predominant type is falling while getting on or off the vehicles, or while getting in or out of the operator's seat. However, this record is partially offset or compensated for by the fact that the severity rate of industrial accidents involving women is very low. (2) The punctuality of women, as measured by missed assignments, could be improved upon. Fortunately, however, the majority of the trouble is caused by a relatively small number of women, except possibly during the first week or so when the women are becoming adjusted to the new and oftentimes inconvenient hours. (3) The rate of absenteeism among women is high. For example, our own record in New Orleans shows it to be four times as high as that of the men. However, from what we read, our industry is not without plenty of company in this regard.

It is our belief that the few items listed on the debit side can be transferred to the credit side by more intensive effort on the part of individual operating companies.

Local transit is also using women for maintenance work in shops and garages - in a wide range of jobs from cleaners to skilled mechanics, including such occupations as armature winders, drill press operators, upholsterers, sign painters, ignition, carburetor and electrical bench repairmen, greasers, and helpers.

To use women successfully in such jobs requires a thorough analysis of the jobs and proper job breakdowns, with the necessary re-engineering. In this connection, it has been found that following the steps outlined for the transit industry by the Transit Manpower Committee of the American Transit Association in the manual on "Selection and Training of Transit Maintenance Personnel," will be very helpful.

The records made by women on these maintenance jobs are good. It is perhaps significant that women working in clean, light and airy garages stick to their jobs better than those who work in garages where the conditions are less favorable and the hours are more irregular.

In supervision, the main differences between men and women are differences of degree. For example, women need more orientation than men, they have less physical strength, and are more sensitive.

Labor turnover in the transit industry has reached a very serious point, running from under 5 percent to nearly 20 percent per month. These percentages make it apparent that the problem requires sincere effort on the part of individual companies, and concerted action on the part of all agencies charged with the responsibility of manpower regulation and control.

REPORT OF INTERCITY BUS GROUP

Manferd Burleigh
President and General Manager
Great Lakes Greyhound Lines, Inc.
Detroit

The intercity bus industry has a larger percentage of women employees than the other transportation industries. In some sections of the country where the manpower shortage is most acute, this industry may need to fill as high as 45 percent of the total personnel with women workers.

The transition to women workers is proving costly, in some cases running as much as 30 percent more in payroll expense, due to training costs, faster rate of turnover, and greater absenteeism. Even so, women are generally measuring up well in replacing men in such jobs as greasing and "gassing" busses, changing motor oil, handling tire inspection and repair, repairing electrical parts, and performing all types of mechanical work that do not require heavy lifting. In many of these jobs, such as greasing and cleaning busses, fine electrical and mechanical work, and work in stock rooms, women are proving superior to men.

To permit increased use of women drivers, bus runs have been divided into several shorter routes so that the women can return to their homes at night. Many jobs in garages and repair depots have been broken down into simpler processes so that two women working short shifts can do the job formerly handled by one man.

Since overtime is not advisable for women because they tire more easily, it is recommended that their working time be limited to 48 hours a week, except in emergencies. To meet such contingencies, it is recommended that the 48-hour week and the 8-hour workday limitation for women, imposed in several states, be lifted for the duration of the war.

It is recommended, also, that women should not compete with men for seniority, but rather that they should earn seniority within their own group for the duration of the war and six months thereafter. In this way, women's names would not appear on the master seniority roster. This provision would would ease post-war readjustment problems.

The following suggestions will help to avoid pitfalls and facilitate the transition from men to women workers:

1. Treat women as equals of men on the job. Do not show favoritism to women, but rather expect them to do a man's work.

2. Do not permit women to supervise other women employees. There are exceptions, but we have found that women prefer to take orders from men.

3. Make provisions for more instruction and closer supervision of women than of men doing the same kind of work.

4. Pay women men's wages when they do men's work.

After the war most women will probably be glad to return to their homes, and for those who wish to continue working, there will be abundant opportunities in the bus transportation industry. But in the long view, it seems inadvisable to consider women for jobs requiring long training periods after men become available, as business will have a distinct obligation to provide jobs for men who have returned from the military services.

The greatest labor shortage at the moment is among maintenance personnel and drivers. The United States Employment Service should give more consideration to the transportation industry than it has in the past. It would also help if automotive and Diesel mechanics were put on the War Manpower critical list.

The industry also recommends that the 35-mile per hour speed limitation on highway carriers should be lifted, as this restriction is wasteful of both manpower and equipment, and does not accomplish its objective which is the conservation of rubber. By reducing the speed limit to 35 miles per hour, schedules have been lengthened 30 percent, requiring more driver time, as well as wasting the time of war-essential passengers. More bus equipment is also required to do the job, and busses actually wear out faster under slow driving conditions than under reasonable speed. With the necessity of maintaining schedules, it is extremely difficult to have to tie up busses in the garage for necessary repairs. Under these conditions, more mechanics are required for maintenance work.

REPORT OF AUTOMOTIVE MAINTENANCE GROUP

M. S. Brooks
Assistant to Vice President In Charge of Sales
The Studebaker Corporation
South Bend

While it is generally accepted by the public and by all interested Government agencies that the railroads, air lines, local transit companies, intercity bus and trucking companies are essential to the wartime economy of the Nation, there is not yet a full understanding or appreciation of what individual transportation means to the over-all transportation system.

Surveys in a number of highly industrialized areas indicate that 80 percent of all war workers travel to and from their jobs in private vehicles. When these go out of commission through lack of maintenance it puts an extra load on the already overburdened local transit system.

One third of all trucks now in operation are used by farmers in the production of farm produce, and their operation to maximum capacity is completely essential in the "Food for Victory" campaign.

There are approximately 24 million passenger cars and four and a half million trucks operating throughout the Nation, depending on the relatively small independent shops of some 125,000 service stations scattered over the country for maintenance and repair. These are unable to bring their problems before the various controlling Government agencies as effectively as the larger transportation units, such as railroads and air lines. The seriousness of the problem cannot be overemphasized, and it is urged that all those interested in the problem of manpower and womanpower in automotive maintenance be given full consideration and every help and cooperation.

Almost 60 percent of the automobile and truck mechanics employed in automotive maintenance prior to the war have either moved into direct war industries or the armed forces. This loss of manpower is further aggravated by the fact that the need for repairs is increasing with the intensified use of existing vehicles. The average repair order now runs between $9.00 and $10.00 as compared with $4 75 before the war. No new passenger cars are being produced and only 75,000 new automobiles remain in dealers' stocks. As for trucks, there are only 50,000 in dealers' stocks, although some relief is expected in the authorization of a limited production for civilian use in the near future.

Automobile and truck manufacturers are trying to interest dealers in recruiting and training women. Only a few, however, have so far responded, and some have been discouraged when the women left for industries that had a higher rate of pay.

The Studebaker Corporation, realizing the drain on automobile maintenance manpower, experimented early in 1942 with training schools for women in both Philadelphia and at their plant in South Bend. From this experience they were convinced that when properly selected women can be trained to be as satisfactory helpers on automotive maintenance work as men of equal experience. The results of these experiments are incorporated in three books, "Recruiting, Selecting, and Training of Women for Automotive Maintenance Service," "Step-by-step Training of Women on 100 Service Maintenance Jobs," and "ABC of Automobile Construction and Design." These are now being distributed and are proving very helpful.

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Application of State Hour Laws to Railroad Women

As women take over "men's jobs" in the transportation field and perform work heretofore almost exclusively carried on by men, a new importance is assumed by the question of the application, to women employed in the railroad industry, of State hour laws for women. Many of these jobs and the conditions under which they are performed require not only a special type of skill but physical strength and endurance. If State hour laws do not apply, women who work in railroad yards, in the shops, or at other railroad occupations now mentioned as available for women may find themselves not only doing heavier work but also working longer hours. The Women's Bureau reports that women, through their employment in other fields, have demonstrated their ability to fill successfully jobs similar to those in which they will be employed on railroads, if they are not employed for too long hours.

State hour laws for women were first enacted because State legislatures recognized that the physical well-being of women is a matter of public concern. As early as 1907 the U. S. Supreme Court affirmed the validity of such legislation, upholding the Oregon 10-hour statute with the following declaration: [1]

> That woman's physical structure * * * places her at a disadvantage in the struggle for subsistence is obvious * * * By abundant testimony of the medical fraternity, continuance for a long time upon her feet at work, repeating this from day to day, tends to injurious effects upon the body, and as healthy mothers are essential to vigorous offspring, the physical well-being of women becomes an object of public interest and care in order to preserve the strength and vigor of the race.

Today the standards established by the best of these laws are an 8-hour day, a workweek of 48 hours or less, and 1 day's rest in 7. Experience has shown that these standards, by safeguarding the worker's health, make possible her highest efficiency and result in the greatest output. The United States Government has recognized that this is true as applying to all workers and has approved as the Government's wartime policy the standards of the 8-hour day, 6-day and 48-hour week. Early in 1942 the eight Government agencies chiefly responsible for the success of the war effort [2] recommended in the interest of maximum war production that employers limit working hours as far as possible to 8 hours a day, 48 hours a week, and give each worker at least 1 day's rest in 7.

As far as the Federal Government is concerned, however, the 8-hour day, 6-day and 48-hour week are only a recommendation and have not the force of law. The Fair Labor Standards Act (29 U. S. C., secs. 201–219 and amendments) does not limit the length of the workweek for any employees, but simply requires overtime pay for work beyond 40 hours a week. Moreover, this Act specifically exempts railroad employees from the overtime-pay requirement. The Federal Hours of Service of Railroad Employees Act of 1907 (title 45 U. S. C. secs. 61–66) limits the workweek for "employees * * * actually engaged in or connected with the movement of any train," but it establishes a lower standard—i. e., permits longer working hours—than the standard recommended in the Government statement of policy. On the State level, also, State hours of service laws which regulate the railroad industry as such are modeled after the Federal law, and in general establish lower standards than State hour laws for women. Hence, the hours standards recommended by the Government agencies previously referred to are legally enforcible to protect women railroad workers only to the extent that State hour laws for women apply to this field.

Recognizing the importance of this question if women in large numbers are to work in the railroad industry both during and after the war, the Women's Bureau in the fall of 1942 instituted a legal research study through the Office of the Solicitor of Labor [3] to determine whether State hour laws are enforcible to cover women railroad workers. The applicability of State hour laws was considered in relation to (1) the Federal Hours of Service of Railroad Employees Act and (2) State hours of service laws regulating the transportation industry as such.

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[1] *Muller* v. *Oregon*, 208 U. S. 412.

[2] *War Department, Navy Department, Maritime Commission, War Manpower Commission, War Production Board, Commerce Department, Public Health Service, Labor Department.*

[3] *The study was directed by Professor Joseph P. Chamberlain of the Columbia University Law School, attached to the Office of the Solicitor of Labor as a special adviser.*

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It was, of course, understood at the outset that the question of coverage of women in railroad occupations by State hour laws cannot be categorically answered, as coverage in a particular case would depend on the wording of the law and the circumstances of the case. The opinion arrived at as the result of the study, however, was that, in general, State hour laws for women applicable to the transportation industry are enforcible for women employed in the railroad industry, notwithstanding the existence of Federal and State laws regulating railroad employees as such. The reasoning on which this opinion is based is here presented by the Women's Bureau as concisely, and in as nontechnical language, as possible.

The Federal Law.

Since the Constitution grants the interstate-commerce power to the Federal Government it is sometimes assumed that the Federal Hours of Service of Railroad Employees Act must necessarily supersede State laws in their application to the interstate-commerce field, including State hour laws for women. A long line of U. S. Supreme Court decisions, however, have established the principle that a Federal law in the exercise of the interstate-commerce power does not supersede a State statute in the exercise of its police power unless the will of Congress to do so is clearly manifest.[4]

This rule was stated by the U. S. Supreme Court in a 1937 decision in the following language: [5]

> * * * The principle is thoroughly established that the exercise by the State of its police power, which would be valid if not superseded by Federal action, is superseded only where the repugnance or conflict is so direct and positive that the two acts cannot be reconciled or consistently stand together. * * * The application of this principle is strongly fortified where the State exercises its power to protect the lives and the health of its people.

In a 1940 decision the Court stated: [6]

> As a matter of statutory construction, Congressional intention to displace local laws in the exercise of the commerce power is not, in general, to be inferred, unless clearly indicated by those considerations which are persuasive of the statutory purpose. This is especially the case where public health and safety are concerned.

That Congress in passing the Railroad Hours of Service Act of 1907 did not intend to exclude State laws which regulate hours of employment of women in order to safeguard their health, is indicated by the fact that the Federal law was enacted for a different purpose: The Railroad Hours of Service Act was designed as a safety regulation for the purpose of protecting the safety of persons and property in interstate commerce and not for the purpose of protecting the health of railroad employees. Congress believed that railroads could not be safely operated by employees who work in excess of the number of hours there specified and who did not have the stated number of consecutive hours of rest.

This point was brought out clearly in a 1910 case in which the Federal Hours of Service Act was in question. In upholding the provisions of the Act, the Court said: [7]

> Congress may enact laws for the safeguarding of the persons who are transported in (interstate) commerce, and of those who are employed in transporting them. The fundamental question here is whether a restriction upon the hours of labor of employees who are connected with the movement of trains in interstate commerce is comprehended in this sphere of authorized legislation. This question admits of but one answer. * * * In its power suitably to provide for the safety of employees and travelers Congress was not limited to the enactment of laws relating to mechanical appliances, but it was also competent to consider, and to endeavor to reduce, the dangers incident to the strain of excessive hours of duty on the part of engineers, conductors, train dispatchers, and other persons embraced in the class defined by the Act.

A different purpose is that which resulted in the laws regulating the hours of employment of women. The object of such laws is to protect the health of women workers by prohibiting their employment beyond a reasonable number of hours. Protection of the health of women is recognized as a matter of justifiable special concern to the State.[8]

State laws which safeguard the health of women therefore come within the class of cases which sustain State laws if they are not in conflict with Federal laws.[9] Thus the Federal Hours of Service of Railroad Employees Act establishes a ceiling on hours beyond which employment of railroad employees covered by the Act would endanger the public safety and which is therefore prohibited. State hour laws establishing shorter hours for women employees in order to protect the health of women as a group do not interfere with this Federal purpose. It is clearly possible for the Federal law and the State hour laws "to be reconciled and consistently stand together."

The study concluded, therefore, that State hour laws for women are not in conflict with the Federal Hours of Service Act and, consequently, that State hour laws applicable to work in the railroad industry are enforcible for women employed by railroads in occupations covered by the Federal Act.

Conflicts between State laws.

The question of whether a State law regulating hours of employment of women will apply in the

[4] *Atlantic Coastline* v. *Georgia, 234 U. S. 280; Pennington* v. *Georgia, 163 U. S. 299; Smith* v. *Alabama, 124 U. S. 465.*

[5] *Kelly* v. *Washington, 302 U. S. 1.*

[6] *Maurer* v. *Hamilton, 309 U. S. 598.*

[7] *B. & O. Ry.* v. *I. C. C., 221 U. S. 612.*

[8] *Muller* v. *Oregon, 208 U. S. 412 (1907); Radice* v. *New York, 264 U. S. 292 (1924).*

[9] *Missouri Pacific* v. *Norwood, 283 U. S. 249; Missouri, Kansas & Texas Ry.* v. *Haber, 169 U. S. 613; Missouri Pacific* v. *Larrabee Mills, 211 U. S. 623.*

face of another State statute regulating working hours in the railroad industry may also be considered from the standpoint that the two types of law were intended for different purposes.

State hours of service laws, like the Federal law after which they were copied, were established as safety regulations, designed to protect the safety of property and the public, rather than to protect the health of employees to whom they applied. In this way, State laws regulating the railroad industry as such differ, as does the Federal law, from State laws safeguarding the health and well-being of women workers.

According to legal principles, where two acts regulate the same or a similar subject they must be construed, if possible, so that both can take effect.[10] This principle was applied by the United States Supreme Court in a case which involved two California statutes, one limiting the hours of labor of all pharmacists to 10 hours a day, 60 hours a week, and the other limiting the hours of employment of women to 8 hours a day, 48 hours a week. The women's hour law was enacted subsequent to the general law. The Court said that the 10-hour statute was necessary for the protection of the public, as it was important that the work of a pharmacist should not be performed "by those suffering from overfatigue." The legislature might in addition, however, limit the hours of women to 8 to safeguard the health of such workers. In this way, the two acts were harmonized and the women pharmacists could not be employed more than 8 hours a day.[11] In the same way, State hour laws for women may be reconciled with State laws regulating hours in the transportation industry.

[10] *State* v. *Brown, 334 Mo. 781; Great Western Insurance Co.* v. *Martin, 183 Ia. 1001; People* v. *Commissioners, 86 Colo. 249; People.* v. *Wallace, 291 Ill. 465; re James, 99 Vt. 265; State* v. *The Equality Savings & Loan Society, 334 Mo. 781; Indiana Truck Co.* v. *Hurry Up Broadway Corp., 220 Ky. 521; Riley* v. *Forbes, 193 Calif. 740.*

Recommendation.

On the basis of this study, the Women's Bureau recommends that State agencies enforce State hour laws, except those in which the transportation industry as such is specifically exempt, to cover women in the railroad industry. Adoption of such a policy would extend the protection of State hour laws to women who enter the railroad industry in occupations new to women. Although some of the new types of work come within the scope of the Federal Hours of Service Act—inasmuch as the worker is "actually engaged in or connected with the movement of trains"—the Women's Bureau study shows a sound legal basis for enforcing State hour laws to cover women so employed.

[11] *Bosley* v. *McLaughlin, 236 U. S. 385.*

U. S. GOVERNMENT PRINTING OFFICE: 1943

Summary - Report
Conference on Womanpower in Transportation
Division of Transport Personnel
Office of Defense Transportation
March 18 and 19, 1943
Washington, D. C.

Presiding
Mr. Otto S. Beyer
Director
Division of Transport Personnel

5-0772-P1of53-NOBU-COS-WP

SUMMARY

On March 18 and 19th a conference on Womanpower in Transportation was held in Washington, D. C. at the call of the Division of Transport Personnel of the Office of Defense Transportation. The purpose of this conference was to determine where women could be most effectively employed in the various branches of transportation and to discuss methods for dealing with problems arising out of the employment of women.

Representatives of both management and labor from the various branches of transportation and representatives from the interested Government departments were invited to participate. These representatives discussed their views and experience freely.

In the airlines, which is the youngest of the transportation industries, women are accepted by both labor and management on exactly the same terms as men, they are given the same training, the same pay, the same opportunities for advancement and the same seniority rights. Local transit and over-the-road bus transportation companies also tend to take a liberal view towards replacing men with women on street cars, on buses, and to a less extent in the shops, garages and car barns. These industries reported that the women they have hired are of a high caliber, and they have proved to be entirely satisfactory. Their primary problem is to get enough women applicants.

Less enthusiastic, but still receptive to the employment of women, were the representatives of management and labor for trucking. There was a difference of opinion about the branch of the industry for which women are best adapted. It was agreed that in order to employ women effectively in this industry certain adjustments must be made. Where necessary, however, women are accepted in certain occupations for the period of the emergency.

Concerning the place of women on the railroads there was less agreement between management and labor. While some of the management representatives considered the time has come to employ women in certain occupations previously performed by men, labor representatives expressed the opinion that there are many railroad occupations which are not suitable for women.

When employing women in men's jobs certain minor adjustments should be made to insure satisfactory results. For example, mechanical devices should be introduced to minimize the need of heavy lifting and carrying. Seats, adequate washroom facilities, and protective work clothes should be provided. Wage rates should be determined on the basis of the work performed irrespective of sex. Qualified women should be referred to employment and training opportunities too, on a basis of equality with men. Jobs, however, should be rearranged so as to speed up the training process.

When a real emergency arises, most states permit relaxation from their labor regulations for limited periods upon application to the labor commissioner. The State laws protecting women are not so restrictive, however, as is commonly believed.

The reports contained herein are condensations of the transcripts of talks made at the conference. They do not necessarily reflect the opinions or policies of the Office of Defense Transportation.

5-0772-P3-NOBU-COS-WP

March 18, 1943
Morning Session

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Opening Remarks
Mr. Otto S. Beyer
Office of Defense Transportation

The Division of Transport Personnel has called this Conference on Womanpower in order that this Office and other Government Departments may benefit from the experience of practical men and women connected with the different branches of transportation and labor organizations. The two things we want to know most are, what jobs you have found women best adapted to fill and what are the main problems arising as a result of employing women in jobs previously held by men.

More and more men are being withdrawn from transportation jobs to enter the armed services. At the same time due to the increasing demand for transportation facilities, employment in transportation has increased. Of the 2,634,000 transportation workers*in January of 1943 approximately 160,000 were women, many of whom were replacing men.

As manpower shortages become increasingly acute one of the major sources of labor from which all branches of transportation must draw will be the women of the Nation. They are our great hope if the transportation systems of the country are to be kept effectively running. Already many companies are experimenting with employment of women in a wide range of jobs. It will be most helpful to pool the experience of railroads, airlines, bus, truck and street car carriers in this important matter of womanpower.

Transportation companies, labor and the Government must work together to provide manpower so that there will be no breakdown of our transportation facilities which are so sorely needed to win the war. Replacements must be found for those men who enter the armed services and war industry and new workers must be found for the increasing demand within the expanding transportation industry. Never before in the history of the Nation have we looked to women as we do today to meet such a problem. Today it becomes necessary for us to appraise the total picture and to see how we can improve the manpower situation, which in some places is already critical, through the utilization of women to meet our transportation needs.

During 1943 many thousands of women will be needed to fill transportation occupations which up to this time have been handled exclusively by men. With this increased employment of women numerous questions and problems necessarily arise. To bring these problems to the fore, to give representatives of labor and management an opportunity to express their views and to benefit from the experiences of those who have already employed women, I have called this conference.

*This figure includes only for-hire transportation.

I. American Experience with the Employment of Women in Transportation

TRUCKING — Mr. Charles G. Morgan, Jr.
American Trucking Associations, Inc.

Prior to Pearl Harbor, the trucking industry was a man's world. Most women in the industry were executives or office employees. There were not many women even in offices. Men operated switchboards, men were stenographers and men occupied most other jobs in trucking.

A survey as of April 1st, 1942 covering approximately 55,000 employees of more than 400 motor carriers located in different parts of the country, showed the proportion of females was 7.9% of the total number employed. A similar survey as of July 31 showed that female employment had gone up to 9.2%. Another survey made on November 15 showed that it had increased to 11.1%. This indicates an increase of 1.5% to 2% in each four months.

When it is necessary to replace men with women on trucks they can be used best in over-the-road service because the problems connected with putting women into that service can be overcome. Women are capable of operating heavy and articulated equipment. They are not so well adapted for local service however. The necessity for lifting and carrying often makes this unsuitable.

Though the experience with women truck drivers has been short, their safety record is, so far, satisfactory. Like all men truck drivers, women have to learn how to operate power brakes, especially air brakes, which work differently from ordinary passenger car brakes. If care is taken in training, the use of power brakes can be easily learned with a little practice.

In the private carrier field, many women drive dairy, bakery and department store delivery trucks, when the commodity transported is not heavy. The service is local and the employment is at regular hours. The equipment is light and similar to the passenger car type of equipment.

Even for jobs which have previously been held by women it is now exceedingly difficult to find and keep a sufficient number. Some of these jobs are filing clerk, telephone operator, stenographer, rate clerk, billing clerk, and other clerical work. For jobs previously held by men it is even more difficult to find suitable women.

Women have been used by both private petroleum companies and other trucking concerns for lubricating work at service stations. Since this work is largely outdoors, women have been known to quit on account of bad weather. Women are also engaged as platform laborers. This requires little training except in the proper way of loading, balancing loads, and checking the items being loaded.

A number of carriers have trained and employed women for rate clerks. After truck carriers have trained the women and they are broken in, however, they often move some place else for higher wages. Women have been used to some extent in stock rooms, and in parts and tool rooms. In this work they have proved fairly satisfactory, though they have had limited experience. Here again, not enough women are available for training. When carriers have been able to recruit suitable women for driving they have had very good experience. An interesting example of the success of women is found in operation of Army equipment from Army pools or from points of production to Army depots. This involves driving jeeps, trucks and all types of Army motor equipment in over-the-road operation.

A number of problems are presented by the employment of women in over-the-road service, however. Hours are irregular and largely at night. Most over-the-road drivers have to stay away from home three nights a week or more. All over the country there are dormitories, service stations or small hotels where regular accommodations for traveling male drivers are provided. But a woman on the road would have trouble in finding accommodations. Moreover, it takes a truck driver with a great deal of experience to know what to do in case of a breakdown on the road. If women are to be employed successfully in the trucking industry, adjustments will have to be made.

LOCAL TRANSIT — Mr. Merwyn A. Kraft
American Transit Association

Like trucking, the transit industry has been predominantly a man's field. In the past, women have been employed as clerks and stenographers, but recently they have replaced men employed in many jobs. The need for employing women arose first in California where the demand for manpower became severe earliest. Women were employed in the transit industry, in San Diego and San Francisco as early as July 1942. Gradually the employment of women has increased. Approximately 30 large and an unknown number of smaller companies have now replaced men with women.

Women were first placed as conductors on cars and buses, that being the easiest job and one not requiring a great amount of previous experience. The next jobs filled by women were those of motorman, one-man car operator, bus driver and clerk in the division and garage offices.

The employment of women in the shops and garages came somewhat more slowly, because of difficulties in making the necessary arrangements for rest-rooms. Among the jobs they now fill are: division clerk, ticket agent, cashier, rapid transit collector, loader, change maker, conductor, motorman, traffic clerk and schedule clerk. In the shops, and in the car houses and garages, women were first used as car and bus cleaners and washers, these being the simplest jobs. Then came servicing, greasing, gassing, making routine inspections, doing electrical and mechanical work. They are also repairing Diesel engines and similar equipment.

The question as to how satisfactory women are in these jobs can best be answered by stating that the only employers that are still skeptical about the ability of women are those who have not yet hired and trained them. Reports from many companies employing women confirm the belief that they can do these jobs and can do them well.

I recently spent three weeks in San Diego, Los Angeles, and Oakland studying the employment of women in three large companies. There I saw them handling 40 passenger buses with no difficulty. Women had no preferred treatment in assignment to runs or shifts. The public as well as the women liked the idea. Meeting time schedules was one problem encountered by women. In the rush to get them out on the jobs, time for training was limited. Letters of inquiry sent to a representative group of transit companies reported satisfactory utilization of women. In fact, they are most enthusiastic about their experience with women workers.

In the employment of women there are two important factors to keep in mind:

1. Making the work sufficiently desirable.
2. Making the work suitable to the type of woman available.

There will be no problem if companies can continue to get the type of woman they now have, many of whom are wives of conductors and bus operators. These women are patriotic, interested in transportation, and show a willingness to put up with new and unusual conditions. Some companies now have the grave problem of finding the caliber of women they need, who can or will do the work required. Where will we get enough women?

AIR — Mr. W. L. McMillen
American Air Lines, Inc.

The air transport industry is young. A survey made before the war revealed that the average age of the personnel was 27 years. When the Selective Service Act was passed more than half of the men were single and under 30 years of age. This low age group of single men coupled with the shortage of available trained men in the operation of airlines and airplanes immediately precipitated a big problem of replacement and expansion. Moreover there was a large number of reserve Army officers subject to call. One out of every three men has been lost to the industry since Pearl Harbor. Since there is no reserve supply of men or women skilled as aircraft mechanics or in other types of work on airlines, the training period for those employed to replace this large percent of highly skilled employees is long.

No difference is made between men and women in matters of employment, except consideration for physical limitation and the difficulty of getting to distant air ports. There has been no difference in the training or the results of training as between men and women. We got into the same messes with new men as we did with new women.

When the war started 80 or 90% of the women in our company were doing office work while 10 or 12% of them were stewardesses. In traffic, reservation, and ticket offices 73% of the workers are now women; 77% of the workers in accounting are women; 100% of the stewardesses and stenographers are women; 84% of the workers in storekeeping are women; 53% of the workers on the ramp are women, and 45% of those employed in fleet service are women. Storekeeping requires the technical training necessary to identify 20,000 parts. Work on the ramp requires loading in all kinds of weather, even zero weather, and in spite of the cold, women stay on the job.

The tenor of the reports on experience with women in the shops varies. It seems to depend on the foreman, his attitude toward women in shops, and his willingness to make the necessary adjustments in his thinking. One foreman may say when women appear for employment and training "What is this world coming to?" But another may say, "Send me more women." Women are not confined to any one type of mechanical work, they do welding, sheet-metal work, and maintenance and repair of engines. There are fewer women in maintenance than in production, because the former requires a much longer period of training.

Other outstanding but rather unusual and isolated jobs held by women at American Air Lines are: publicity writer, photographer, junior meteorologist, Link trainer instructor, office manager, materials laboratory assistant, radio operator, and radio operator trainee.

In general the work of women is as satisfactory as that of men. They are thorough, enthusiastic; in fact they are fascinated with planes and often prefer them to typewriters. Women are more cautious than men and sometimes seem to lack initiative in proceeding with the job. There is no problem in discipline, and there are no sex problems, but caution has been exercised in grouping workers, young and old, men and women, white and colored, making groups that do not have too much in common to distract them from their work.

Aviation has tended to attract a high class person, whether man or woman. Within a few years the percentage of women to total employees has greatly increased. Our manpower problem is a matter of training and of time - not a matter of sex.

RAILROAD

Mrs. M. J. Ward
Union Pacific Railroad

The employment of women is nothing new to the Union Pacific. This was started a long time ago when the women's travel service department was initiated. Women have been employed as laborers in the stores department. They are very satisfactory. The number of female telegraphers and telephone operators has been more than doubled. Women are in the shops as helpers and laborers. Men are not hired in the offices unless they are above draft age. A very high type of woman with good qualifications is available. Women have not been hired for train service yet, nor for track labor which is considered too strenuous for them.

RAILROAD (cont'd) Mr. J. E. Newman
New York Central Railroad

The employment of women is not entirely new to the New York Central Railroad. At the present time approximately 5,000 women are employed there. This represents a little more than four percent of the total number of employees.

The New York Central established a school in New York City for training women ticket sellers. This course which continued for seven hours a day for seven weeks was very successful. Since then at least two schools have been established for training telegraphers, women, men over 45, and those not subject to Selective Service are eligible. Neither men nor women can become all-round mechanics in a short time; but relatively little training is required to make women proficient for a number of jobs in the machinist group, and for welder, helper, electrician, sheet-metal worker, painter, upholsterer, patternmaker, and oiler. Women have also been working as cleaners, truck operators, and in various kinds of laboring jobs such as engine cleaning, turn table operating and lubricating. Throughout the system women have been employed as messengers. The company has become educated to the fact that it is necessary to employ women when men are not available.

Our experience with women employees has been satisfactory. Careful selection of women according to aptitude for and attitude toward the work is an important factor in getting good results.

RAILROAD (cont'd) Mrs. Pearl Dee Church
Office of Defense Transportation

The percentage of women in railroads is still small. The largest number of women is employed in clerical work. Even in the clerical group there are still relatively few women in railroading, with the exception of office machine operators. The male sex is still popular in the railroads as secretaries.

A few of the unusual jobs that women are doing emphasizes what they can do. The Southern Pacific, for example, is now hiring women for work in numerous railroad occupations never before open to them. They are to be found as steam hammar operators, rivet heaters, and turntable operators. Women are handling bolt cutting machines, drill presses, paint sprayers and lubricating appliances. They are also serving as tractor drivers, crossing watchmen, locomotive wipers, scrap sorters and cutters, yard and crew clerks, crew callers, round house clerks, stationary fireman, journal box packers, store helpers, draftsmen, sandhouse attendants, blue printers, and tool and supply checkers. In addition they are doing many "housekeeping" jobs such as cleaning freight and passenger cars, polishing locomotive cab windows and headlights, tidying railroad yards and steam cleaning moving parts of locomotives.

Some women are working as boilermakers; not only as helpers, but actually as boilermakers; there are a few electricians, upholsterers, brakemen, bridge and building mechanics and machinists. Some few women are working out in section gangs with pick and shovel. Others operate cranes in the shops and on the sidings. The number of women in these jobs is not large and it does not materially affect the total, but it does indicate what women <u>can</u> do.

WAREHOUSING — Mr. Warren T. Justice
Pennsylvania Warehousing & Safe Deposit Company

In the warehousing industry the office force is about 90 percent women. Jobs such as stenographer, checker, and clerk are practically all filled by women. Women also do a great deal of the supervision. The heavy lifting and piling of materials in a warehouse is generally done by men because it is too strenuous for women, and eighty percent of our help must be able to lift 100 pound packages. Obviously women do not fit in there.

OVER-THE-ROAD BUS — Mr. Manford Burleigh
Great Lakes Greyhound Bus Company

The experience of the Great Lakes Greyhound Bus Company checks pretty well with that of the American Transit Association. Women are very satisfactory. Because the number of women is increasing so rapidly, percentages change every day, so that up-to-date figures are not available. Many women are now going into the shops working as drivers. They are lubricating buses and are doing an excellent job. They act as conductors, ticket agents and for years have been employed as cleaners. We have been surprised to find that some of the smaller women make as efficient bus drivers as larger ones. The accounting departments throughout the country employ practically all women. In fact, it has been found in our industry that women can do practically everything a man can do.

AUTOMOTIVE MAINTENANCE — Mr. Ray Chamberlain
National Automobile Dealers' Association

The experience of the National Automobile Dealers' Association is somewhat different from that expressed by most of the representatives here this morning. This Association represents about 50,000 independent shops, most of which are small, distributed widely over the country. The average clerk and bookkeeper jobs are almost entirely filled by women. In the small shop the average mechanic is a general mechanic. He must be able to perform many types of mechanical work because the work varies widely during the day ranging from brake adjustments to wheel alignments, or to gasoline motor repair. It is therefore necessary for him to be an all-round shop worker. Except in the larger shops very few women have consequently been employed. Women have proved satisfactory as storekeepers, but after training, many of the women go to other industries where they are paid higher wages. Some solution for this problem is needed.

II. A Statistical Picture of Women In Transportation

Mrs. Helen Robison
Office of Defense Transportation

In the eight-month period from May 1942, to January 1943, employment in transportation increased from 2,512,000 to 2,634,000. It has been estimated that there were about 120,000 women employed in for-hire transportation industries in September 1942, and a steady upward trend in the employment of women in all branches of transportation is noted.

The commercial airlines have set the pace for employment of women in transportation and probably are close to employing one woman to every two men today. Although flight personnel is exclusively male, except for stewardesses, the airlines are now using women in ticket offices, shops, hangers, and air fields.

Other branches of transportation are still lagging considerably behind this record. While railroads employ a larger number of women than any other transportation industry, women constitute only about four percent of all employees. Negro women in the East and Mexican women in the Southwest are often found in laborers' jobs. The railroads still have to reach the peak of the last war when 100,000 women were employed, but it is expected that peak will be reached and passed in 1943.

The for-hire trucking industry employed about 50,000 women in January, which is nearly 10 percent of the total personnel of the industry. However, only in rare instances have women been reported as drivers of trailer-trucks in over-the-road trucking, and only a few reports have been received of women driving small trucks in local service.

In the local transit industry, about 94 percent of the companies employed women in January, and the number of women employed has risen from about 8,000 in July 1942, to 11,100 in January 1943. There were 6,600 women employed in the inter-city bus industry in January 1943, as compared with about 4,000 in July 1942.

The public warehousing and storage industry employed about 5,700 women in January as compared with 5,100 in July 1942. In this industry, women have been employed almost exclusively in office work, except in frequent instances where they are engaged for highly seasonal unskilled work. The pipe lines, too, have never used women except in clerical office work, although a recent report indicated that women are being introduced into laboratory work for the first time in one company. Domestic water transportation offers very few opportunities to women, outside of office clerical work.

Even if no expansion in transportation employment occurs, employers are facing a replacement problem of very large proportions, and constant recruitment will be necessary if only to keep at current employment levels. Labor requirements of for-hire transportation will necessitate an increase in employment by an additional 175,000 from

January through October 1943. The need for women is especially great in areas of concentrated war production where local facilities such as housing, education, transportation, and other services have become overtaxed. It is most important to avoid further congestion and further shifting of personnel.

March 18, 1943
Afternoon Session

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III. British Experience with the Employment of Women in Transportation

Miss Dorothy Fells
Office of Defense Transportation

Almost from the beginning it was recognized in Great Britain that the outcome of the war depended largely upon industrial production and that the womanpower of the nation would eventually have to be mobilized. In preparing the list of reserved occupations for men of specified ages the possibility of employing women was therefore taken into account from the first.

Under the Registration for Employment Order issued in April 1941, all women between 18 and 45 years of age, except single women 20 to 24 who have been called up for the Women's Services, and women with children under 14 years old living with them, have been registered for work in essential industry. Among the activities considered essential to the war effort are the Transport Services. Other controls established by the Ministry of Labour under the Emergency Powers Act and the National Service Acts make it impossible for women engaged in the transportation industries to transfer to other jobs without permission from a National Service officer.

Nearly 20 percent of all employees of the four mainline railways and those engaged in local transit in the London area, are now women. Women are employed somewhere in almost every type of transportation job except the few which physical or other limitations render impracticable. On some jobs women can produce as much or even more than men did in exactly the same jobs; but it is generally estimated that a woman produces about 75% of what a man did on maintenance work, taking into consideration necessary de-skilling, extra supervision and other necessary adjustments.

The greatest number of women in transportation are employed as clerks, bus conductors, platform porters and in cleaning and other unskilled service work. No women are employed on merchant ships or as dock workers, though they do load and unload cars carrying freight which has come by boat, at the inland sorting depots. No women are employed as locomotive engineers or firemen, though a few act as guards and operate signal boxes on branch lines. Only a few women do track work and these are employed within a short distance of their home station. The only other jobs from which women are excluded on railways are those considered too dangerous, too heavy or too skilled.

Only about 300 women drive buses in Great Britain and most of these drive the coach buses rather than double deckers. About 90% of all bus and street car conductors are women. Women are also employed in large numbers in the bus, underground and street car shops, at the stations, in the offices, as cleaners and in connection with lubrication and minor repairs. No women operate underground trains, and no women drive heavy commercial trucks, though they do drive heavy Army trucks and light commercial vehicles. They are also employed to a considerable extent as motor mechanics and for service work.

No women are employed as commercial pilots, though about 100 women pilots ferry planes from factories to air fields including fighters and bombers of all types. Many women are employed as airplane mechanics working on engines, instruments and air frames; many are also employed in ground service and in offices. Women of the W.A.A.F.S. are also used in a long list of jobs at bomber stations. There they serve as meteorologists, in control towers, ground crews and in many other responsible capacities.

Women in so-called "men's jobs" are everywhere employed on a temporary basis. The average work week is about 56 hours including overtime, though some work longer. Women are paid on the principle of "equal pay for the job" laid down by the Industrial Court in a case involving bus conductors, at the beginning of the war. The terms of their employment, including the types of work which they may do, are usually set forth in agreements between the employers and the unions concerned.

Though many new and some difficult problems have arisen in connection with employment of women in men's jobs, a solution has always been found and on the whole it is conceded that women have done excellent work. In fact the war could not be won without them.

(A copy of the complete report on Employment of Women in Transportation in Great Britain will be sent on request)

March 19, 1943
Morning Session

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IV. State Laws and How They Affect Women in Transportation

Mrs. Clara M. Beyer
Division of Labor Standards
Department of Labor

The transportation industry is familiar with the operation of labor laws. Various Federal statutes applying to both men and women have been in effect in this industry for years. It has also operated under State laws of general scope, and special application to women as well

as to
employees in the office and service trades. The problem now is to adjust the application of legislation to the women who will be employed for the first time in many of the mechanical and operating branches of the industry.

The standards embodied in State labor legislation are those that are generally accepted as good practice by the vast majority of employers. The 8-hour day, the 48-hour week, one day of rest in seven, regular meal periods, and proper sanitation are all measures contributing to efficient production.

While most of the States permit relaxation from their labor laws for limited periods upon application to the labor commissioner, these relaxations should be requested only for real emergencies. The transportation industry would be wise to accept the basic legislative standards as their operating standards for new women employees. To organize shifts for women on a basis of longer hours and less favorable working conditions would only lead to difficulties. Experience has demonstrated again and again that the longer work week for women leads to fatigue, illness, absenteeism, and turnover.

The State and Federal labor departments will be very glad to cooperate with any branch of the transportation industry in dealing with the problems of employment of women.

At the request of the War Department, the Division of Labor Standards of the U. S. Department of Labor is now developing an advisory code on weight lifting and carrying which will be available to industry to guard against the accidents due to improper weight lifting. Other types of technical material which are being developed for industry in general will be applicable to sections of the transportation industry and may be obtained upon request.

V. Recommended Adjustments Where Women are Employed in Transportation

Miss Mary Anderson
Women's Bureau
Department of Labor

Women can readily step into most clerical and cleaning jobs, but many of the other jobs represent new work activities for women, and for the sake of promoting their health and efficiency certain standards need to be kept in mind, and some require adjustments.

When women work machines the parts should be fed or handled by conveyors, hoists, or other mechanical devices that will take heavy weights. It is vitally important to put all the necessary guards on machines and to use all possible mechanical safety devices. Small plant adjustments, such as raising platforms, lowering work-benches and scaling down the handles of tools are also helpful in facilitating the work that women do in the shops.

The fatigue is usually greater on night shifts, especially on the graveyard shift, and so physical examinations should determine which women are equal to this extra strain. It is important for all workers, but more so for night workers, to have hot food at the mid-shift meal. Shifts should not be rotated frequently, yet not at such long intervals that fatigue accumulates.

Regular meal hours, with a minimum of 30 minutes for lunch, are very important to the maintenance of health. Seats for women bus and street car drivers should be adjustable and the standards of good posture should be maintained with support for the small of the back, and the seats not too deep to rub under the knee.

Since many of the new jobs like those of motorman, train conductor, ticket agent and dispatcher require much standing, women who have previously been sales clerks, or waitresses are especially desirable. They are accustomed to being on their feet, to handling cash and to meeting the public.

On jobs which require women to work with oils or grinding lubricants, which might cause dermititis, they should be provided with protective cream to rub on hands and forearms. Adequate washroom facilities with plenty of soap and hot water, are also essential to prevent dermititis, while the work clothes worn on certain jobs need to be laundered often as a preventative measure. Types of work clothes should be adapted to the job, in accordance with safety and efficiency requirements. Sensible shoes, proper headwear, and no jewelry are basic rules for safe work clothes.

Last but by no means least, comes the question of wages. The Women's Bureau stands for a wage policy that fixes an established rate for a job, whether the job be done by a man or a woman. Often, however, the installation of a new lever or an electric button enables a woman to operate a heavy machine which formerly taxed the strength of an able-bodied man. The installation of such a labor-saving device should be chargeable not to women workers, but to capital improvements. How much better it would have been for the men formerly on the job had they also had the advantage of such labor saving devices.

VI. Recruiting and Selecting Women for Transportation Jobs.

Mr. Glen Brockway
Bureau of Placement
War Manpower Commission

To promote the rapid and orderly induction of women into the labor market the War Manpower Commission has declared the following basic policy for recruitment and referral of women workers:

(a) Qualified women who are unemployed and who are registered in local offices of the United States Employment Service be referred to employment and training opportunities on a basis of equality with men, due regard being given to their qualifications for the available work, to the physical requirements of the occupations, and to working conditions;

(b) Women without children under 14 years of age be actively recruited for employment and training, but this principle shall not be construed to mean that women who are responsible for the care of young children and who desire work are to be deprived of an opportunity for training or employment;

(c) Special efforts to secure the employment of women with young children be deferred until all other sources of local labor supply have been exhausted, in order that established family life will not be unnecessarily disrupted;

(d) In those areas in which industrial concentration and lack of housing, transportation, and other community facilities compels the fullest utilization of every labor resource in the locality, every effort be made to utilize fully, women qualified and able to contribute to war production or essential civilian employment before workers are recruited from outside the locality;

(e) Adequate facilities be provided for the care of the children of working mothers, which facilities should be developed as approved community projects and not under the auspices of individual employers or employer groups;

(f) Every effort be made to recruit and refer women, including older women, for employment or training on the basis of their qualification for an occupation without discrimination because of race, national origin or creed.

Management and labor should cooperate to remove all barriers that militate against the employment of women. There should be a greater and wider study of jobs to encourage the fullest employment of women. The War Manpower Commission through the 1500 local U. S. Employment Service offices can offer the transportation industry direct help in recruiting and direction of women.

We must be cautious, however, about the all-out registration of women, for if jobs are not available in a community after registration, women are certain to become discouraged and confused. All-out registration should be applied as a last resort only. Intensive placement to fill known demands in shortage areas should be utilized to the fullest.

VII. Federal Aids to Training for Transportation Jobs

Mr. Philip S. Van Wyck
Bureau of Training
War Manpower Commission

Due to wartime requirements it is essential that the training process be speeded up. The volume of training is much greater now than in a period of peace. The trainees are also greener than usual. Because of these unusual conditions it is necessary to break down the jobs into simple tasks; to streamline-training methods; to improve the quality of supervision and to instruct the foreman upon whom the result of training depends on "breaking in" women in new jobs.

The training of new workers should be carefully planned and organized in order to meet the pressure of wartime needs. Planning and organizing does not necessitate setting up elaborate training schools and training programs. However, it is necessary to have in mind a time schedule, to decide when training is to be done, how it is to be done and who is to do it - and then do it.

Before making these decisions a plant survey should be made to determine needs for training, available training personnel and facilities, either in the shop, in other shops or in the community schools and colleges. Plans could and should be improved upon as training progresses.

Your attention is especially called to some of the Federal aids to training which are available for the transportation industry. The Federal Government, recognizing the need for expert training advice, has established a corps of training specialists to assist industry with its training problems. These representatives are available for consultation throughout the country. They aid in appraising training needs and in organizing training programs. The Government has provided supervisory training for employed workers under the Job Instructor Training Program. This gives the supervisor practice in breaking in new employees on new jobs. The Job Methods Training Program shows the supervisor how to simplify and improve methods of doing a job, while the Job Relations Training Program gives the supervisor points and practice in how to work with people in a way that gains cooperation and promotes teamwork.

Under the Apprentice Training Service, assistance is given in improving or inaugurating apprenticeship programs, and advisory assistance is provided to prepare employees for advanced work in a limited number of particular skills.

The various public vocational school systems offer free facilities for vocational training through funds provided by the United States Office of Education. The kinds of courses offered are determined by local war needs, and these courses are available to the transportation industry.

Funds are also provided by the Government to permit colleges and universities to offer free training of college grade in engineering and scientific fields and for managerial positions under the Engineering, Science and Management War Training Program. In all these programs the Federal Government aids considerably in meeting the costs of instruction and materials, but not in the payment of the trainees.

Either the Bureau of Training of the War Manpower Commission or the Division of Transport Personnel, Office of Defense Transportation, may be consulted with regard to practical steps for inaugurating a training program.

VIII. The Reaction of Women to Training

Miss Cornelia Edge
Office of Defense Transportation

In the labor market today, we do not think in terms of men and women but in terms of workers, enough workers to do the job of winning the war. Since Pearl Harbor, serious manpower shortages have forced many industries to employ women, some to replace men called into service, some to extend the total number of persons in their employ.

It was seen from the discussion yesterday that many employers in the transportation industries have already added great numbers of women to their forces and have made the necessary physical and psychological adjustments. Mr. McMillen of the American Air Lines, representing a young industry, told how his company had always considered women as a part of its labor force and how a high percent of women had been added since war was declared. For the air lines, training of women presents no problem, as no adjustment in their thinking or in their equipment is necessary.

Mr. Beyer warned employers not to wait until they have a labor problem or a drastic labor shortage before they make up their minds to employ women. There is not then time for training and working out the necessary adjustments before women are thrown into jobs - often to fail.

The demand for womanpower will increase in proportion to the demand for men in the armed forces, in essential jobs and in production of war materials.

Because the nature of many of the essential jobs is new to women, training is necessary either on the job or in training schools or in both. The urgent need for workers and evident lack of time often preclude giving a thorough all-around training course such as that for mechanics. This makes it necessary to dilute or break down the job so that a woman is taught one simple operation at a time. Then, when time and circumstances permit, she may be given additional job training which will enable her to perform more difficult tasks as she already has a background of experience in a given environment.

The methods of instruction for women, in most cases, are identical with those of men. Yesterday, Mr. McMillen said, "We got into the same messes training men as we did in training women." However, the initial attitude and aptitude of a woman trainee differ from those of men. The employer or the foreman quite often looks at a woman trainee in a different light.

In most instances, it is necessary to give the women more preliminary training than is given to men because most women are not accustomed to shop atmosphere, moving machinery, use of tools, safety devices and safety garments. Many housewives have individual working habits and they are often thrown into groups, or into unfamiliar settings with unaccustomed schedules to meet. Another factor which may retard training of women is crowded classes or crowded work places. Too little to do also disturbs many women. Most women want to know why certain operations are done certain ways. Why the bus schedule should be met at 6:52 instead of 6:56. Could lateness in meeting a schedule be attributed to the fact that women are unduly cautious and conservative in the operation of buses or street cars? Should increased confidence be built up to overcome this difficulty? Women like to have a motive, an incentive, an inspiration for their work.

Adjustments to training and to the job are necessary. Most women, some of whom have been housewives, must make adjustments to a new situation, an unaccustomed atmosphere, strange noises, odors, etc., while men are merely continuing their previous or similar work. However, women are adapting themselves to new work much more quickly today than they did a year ago. Instructors and employers and men workers are also adapting themselves to women workers.

After women have learned a new job, they become enthusiastic about the work; they are conscientious and frequently become so proficient that they set the pace for other workers. Someone suggested yesterday that the first women in a shop, warehouse or bus should be the best that can be found so that they will "set the pace" for those women who follow. All women should not be put in the same category. Selection and placement of women with little regard to qualifications, past experience, training, likes and dislikes, often proves to be a boomerang. Simple repetitive routine jobs tire women with creative minds. Training is not a great problem if women are properly selected for the job and if the training methods are right. That goes for men, too.

March 19, 1943
Afternoon Session

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IX. Labor Agreements and the Employment of Women

Mr. T. C. Cashen
Railway Labor Executives' Association

Sometime ago the Railway Labor Executives' Committee appointed delegates to meet with representatives of management and of the Office of Defense Transportation for a discussion of manpower problems. Among other subjects, consideration was given to employment of women on railroads to fill the places vacated by men called up for military service. We shall consider this matter again with a view to working out a satisfactory arrangement.

There are a number of positions in railroad service that women can fill. There are also many for which they are not suited. During the last war women occupied positions on railroads that we never dreamed they could fill. In this war they seem to be going far beyond what they did in the last war.

Representatives of the carmen, machinists and others are here to tell you about the use of women in their particular fields. But I can tell you that women are not adaptable to the job of switchman. There is only one place where you can teach a switchmen to switch cars. That is out on the cinders, out in the yards where they do the real job, and it is one of the most hazardous positions in the entire railroad service.

In the last war there were terrific casualties due to the inexperience of switchmen. Indeed it was much safer on the battle front then it was on the switching front. So I am saying to you, don't put women in the switching service.

To be sure, one American railroad has employed a number of women for various jobs; one of which is switch tender. But that is the exception to the rule. Today switch tenders' positions are generally held by men old in the service, often by men who have been crippled. And there is no particular advantage in putting a girl or a woman on a set of switches, to relieve a man who has one arm or leg.

A number of reports have been made at this conference, indicating the great number of jobs that women can do. This is true to a certain extent. There are many positions on the railroads which women can and do fill with advantage, and they are needed. But the jobs of switchman or switch tender are not the kind for women. And I hope I shall never see the day they do it.

Mr. Fred Tobin
International Brotherhood of Teamsters

Yesterday a letter was received from our office which clearly explains the position of the International Brotherhood of Teamsters. The letter reads in part as follows:

> "Because of the emergency confronting our country and the shortage of labor in many of the branches of our trade, each local union shall be empowered to admit females to membership if they so desire, with the distinct understanding that the rate of wages paid men shall be maintained; that the dues shall be held to a minimum; that the initiation fee shall be as moderate as possible; and that each applicant shall be requested to sign a statement agreeing to the fact that the local can withdraw their membership whenever in their judgment the emergency ceases."

We are distinctly opposed to women engaging in some branches of our employment, such as the hauling of coal and building material, heavy over-the-road trucking, and several other branches. Therefore we leave the decision as to the admission of females into membership to the local union itself and not to the Joint Council. If, however, the local union discriminates and is biased or unnecessarily unfair in the question of the admission of women into membership, then the International Union interferes and instructs the local union what it must do.

The General Executive Board recommends that female members shall not be subjected to medical examinations as a requirement for membership and that they shall not be entitled to sick or death benefits, or any other benefits with the local union except those pertaining to wages, hours, and working conditions contained in the regular union contract covering male members.

Summing up the entire action of the General Executive Board, it has decided that females can be admitted to membership; that the local unions shall decide whether women are to be admitted to membership within the jurisdiction of the local union. The General Executive Board decides in which branches of our employment women workers shall be admitted. The International Union is empowered to order the local union to comply with the decisions of the Board where there is an indication of prejudice or unfairness towards women workers and where they are needed because of the shortage of men.

The General Executive Board has further decided that initiation fees and dues shall be kept as low as possible and that women workers shall surrender their membership without protest upon the expiration of the existing emergency. The question of when the emergency has ended is to be decided first by the local union and then by the International Union. The General Executive Board has further decided that in a district where it is proved conclusively that capable male help can be provided, no female shall be admitted to membership in the local union. The reason for this decision is that there are many instances where employers would like to hire women workers to the disadvantage of male workers, in order eventually to bring down the cost of operation. The General Executive Board has also designated certain branches of trucking in which women workers should not be permitted to engage.

Mr. Felix Knight
Railway Employes' Department, A.F.ofL.

The Railway Employes' Department speaks for all of the skilled trades, their helpers, apprentices, and employees of the mechanical department of the railroads throughout the country. I, therefore, speak with some authority. There are a great many positions that could be filled by women with credit to themselves, but there are many jobs that they cannot fill. Work in the mechanical department on the railroads of this country is not new work. It is maintenance work and involves dismantling and tearing down, rebuilding and repairing equipment that has often been in service for a long time.

Many women lack natural mechanical inclinations as compared with the natural or acquired mechanical inclinations of men. If women are now taken into the transportation industry, however, they will in two or three generations acquire more of that natural mechanical skill. Even now American women will far surpass the productivity of European women when they have been in mechanical work as long as European women have.

But American women should not be called upon to do heavy, dirty work such as rebuilding and repairing cars when it requires work out of doors in zero weather.

The mechanical department is very proud of the part it has played in making the American transportation system the most efficient in the world. Proper training of new women workers is therefore very important, otherwise efficiency will be reduced, and we do not want that. But we do not approve of women entering as apprentices for a four year training period.

The women who come into the mechanical department of railroads have the advantage of our agreements to the same extent as the men. They get the same pay as the men for doing the same work. They have the same seniority status as men now in the service or men who may enter the service hereafter. We shall need neither men nor women as railroad mechanics, however, unless the railroads are able to obtain the necessary material to maintain the efficiency of their equipment.

What I have said is not to be construed as meaning that we are averse to having women in the railroad service, or that we do not like them. On the contrary we are only trying to protect them from the very heavy work that women have been doing for generations in Europe.

Mr. Martin Miller
Brotherhood of Railroad Trainmen

Women cannot work in all phases of train service. As a matter of fact, it is questionable whether they really fit in any part of the train service. However, some of the railroads have seen fit to employ a few of them. Certainly women should not serve as brakemen on a freight train. There are numerous reasons for this. One prime reason is the limitation on weight lifting. It is often necessary to carry draw heads weighing 90 pounds or chains weighing 100 to 150 pounds, sometimes the full length of the train, and trains are now-a-days very long. Often the right-of-way is not level, and then too brakemen are required to set brakes going down inclines in the yard. Even a physically strong women could not stand the rigors of setting the ordinary hand brake. If a brake jumps it creates a terrific strain, and often workmen are killed in this way.

The Brotherhood of Railroad Trainmen will not stand in the way of progress or do anything to prevent this nation from winning the war. Regardless of past and present prejudices each and every one of us as Americans should put all selfish interests aside, including profits as usual, business as usual, contracts as usual, to win this war quickly. If we don't win, what matters?

The Brotherhood of Railroad Trainmen has rendered and will continue to render all possible cooperation for the full and complete prosecution of the war. Our position was first evidenced by the no-strike pledge. This will continue with the hope that victory over our enemies may be achieved.

The following statement will indicate the position of the Brotherhood of Railroad Trainmen, relative to womanpower in transportation:

> "If all manpower resources are utilized to the fullest extent and there is further need of employment in transportation, we will concur in the employment of women. However, we believe it to be to the best interest of the nation, particularly to transportation, that all available manpower be utilized before the employment of women. We can see no reason why the transportation companies should not relax the employment qualifications of men as the first step in the full utilization of all available manpower. Age limits should be raised and can reasonably be raised to 60 and 65 years in the acceptance of experienced train service employees. Along with raising the age limits should go relaxation of some of the strict physical requirements.
>
> "If it should become necessary to employ women in train service on the railroads, they should be considered as temporary employees. The seniority rules must remain intact, and women so employed must be paid the same wages and be permitted to work under the same conditions as male employees."

The agreement between the Brotherhood Committee and the Pennsylvania Railroad and the Baltimore and Eastern Railroad Companies states that females who are taken into service during the emergency shall be temporary employees and shall acquire and may exercise seniority with respect to other females, but shall only retain such seniority during the period of the present National Emergency. This agreement also provides that:

> "Females employed under the terms of this Agreement shall be assigned to the extra list and shall rotate thereon with and in the same manner as male employees assigned to such extra list. When a female on the extra list stands first out, she shall be considered available and used in the assignments for which qualified as agreed upon under the terms of Paragraph 3 of this Agreement."

I believe that we have taken the necessary steps to insure employment of females in train service; but I do not think it is in the best interests of the country to employ females permanently in railroad positions which they have not heretofore occupied.

We should do everything we can to meet the emergency of war and relent and sacrifice when necessary. But whether women are a success in transportation also depends upon the attitude of management.

Mr. Joseph J. Kehoe
Amalgamated Street & Electric Railway
Employees Association

As far as the Amalgamated Street & Electric Railway Employees Association is concerned, women are welcome in the organization; their seniority rights start as of the day they enter the employment and they are entirely welcome to continue as long as they wish to hold their membership in the organization. They have the same rights and benefits that men have. The policy outlined by the International permits women to full membership and seniority rights.

A number of women in small cities of the country belong to our organization but there are only a few female members in larger cities. As far as the girls are concerned, if they can stand the street car business, we want them.

Mr. J. G. Bigelow
Amalgamated Street & Electric Railway
Employees Association, Local 689
Washington, D. C.

There is a real need for women in local transit in Washington. The local union and all its members welcome women into men's work. Employment of women has a good influence upon male workers.

Mr. Harry Sachur
Transport Workers Union of America

There seems to be more enthusiasm on the part of management for the employment of women during war time, than there has been on the part of labor. The explanation for this difference is that in some instances management foresees the possibility of lowering standards through the employment of women, whereas the labor unions dread this and are cautious about introducing women unless guarantees are provided that they will be given equality throughout the industry.

Labor has no deep-seated prejudice against the employment of women, but we do object to lowering of standards as the result of the employment of women. I think it is necessary to give women hope of continued employment after the war because there will be many skilled jobs for which they will be needed in the post-war period.

All rights possessed by men should be accorded to women, both in the constitution of our labor organizations and in contracts entered into between management and labor. Outstanding among these rights is equal pay for equal work, without lengthy discussions as to what constitutes equal work. The principle should be observed in spirit as well as in letter.

The employment of women, if it is to have any meaning, must be predicated not upon necessities, but upon the democratic principle that women and men have an equal right to work. In a democracy negro men and negro women have the same right to work as white men and white women.

Safety and sanitary measures such as toilet facilities, rest rooms, and other amenities that men and women ought to have should also be considered. Adequate facilities, such as day nurseries and other measures for child care, should also be provided so that married women with families will be enabled to fulfill their duties on the job as well as in the home.

We have a war to win and I think that full extension of the rights of equality and democracy to the millions and millions of Americans will create an Army which will help to bring us victory in 1943.

Mr. J. L. McFarland
Air Line Mechanics' Association

Six months after Pearl Harbor, the air transportation industry started to employ women. The union had many barriers which had to be disposed of. Immediately steps were taken to amend the constitution and by-laws to permit full membership to women. Under existing contracts, women and men draw equal pay for equal work. Women have full seniority rights along with the men. No fence has been built or will be built around the women. Contracts provide that all of the members who volunteer for military service or who are drafted, will continue their seniority during the entire time

that they are in the armed services. The same arrangements would apply to women.

In air transportation, there are many jobs that women can do and do well. We are continuously training women for these positions. Prior to assignment of women to jobs on some air lines, it is required that they be given four to eight weeks of instruction on the fundamentals of the work they are to do. While in training, they are paid union wages by the management.

Women are very adaptable to the work in the instrument department because the parts of instruments are small. It is tedious work and they do a better job than men because they do not mind monotony. In both the electrical and radio departments, women are doing a fine job. Women can also be trained for work on airplane engines, for airplane overhaul, for sheet-metal work, and for stock room and tool room work. They are also good at welding. Today all the turret lathe operators are now women in one of the largest airlines in the United States.

As yet only five women have been licensed as aviation mechanics, but it is anticipated that there will be more in the near future in the United States. The union has established short training courses for both men and women at no cost to the company or to the Government. Jobs have also been broken down to encourage the employment of women. Male workers who are trained in all the phases of work are released for more highly skilled jobs. More supervision is necessary since a large number of new women workers have been employed.

At first many difficulties arose but they were met through consideration and discussion by the union. Rest rooms and rest periods were secured as the result of our discussions with management. Hot meals were arranged for on the night shift. The amount of weight that women could lift has been limited by contract. Agreement was reached on jobs assigned to the women. It was found, however, that there are very few jobs in our industry which women cannot perform.

More applicants from women than from men for the apprenticeship training are recorded each day. This indicates that women intend to stay in this industry after the war is over. Women will be protected in so far as their seniority and wages are concerned. Committees have been appointed whose responsibility it is to see that the rest rooms are properly cleaned, and properly supplied. A committee was established to check up on the matrons who look after the welfare of women workers. The safety committee is responsible for the safety of women, not only in their work, but also in their transportation to and from jobs particularly during the night hours. There are very few problems connected with employment and assignment of women in the air transportation industry that cannot be solved. Women are welcome - they make good workmen and good union members.

Mr. Joseph Posch
International Association of Machinists

For thirty-eight years, the International Association of Machinists has admitted women to membership in its organization. In fact, seven years ago, the word "female" was striken out of the constitution. There is no differentiation between men and women today. All members of our organization have the same rights and privileges. Thousands of women who operate machines or do line production jobs are members of our organization, though the records show that they are not all-round mechanics.

Admission of women into railroad shops will not solve our main war problem, however. The great need is materials with which to maintain railroad equipment and keep it in good condition.

Mr. Winfield Shannon
Air Line Pilots Association

The only place which women have filled in the flight personnel, is that of stewardess. In the actual operation of airliners, the problem connected with employing women is not what we think about it, but what the public thinks. The public will not yet accept women as pilots and co-pilots.

Years ago the Aeronautical Association at the request of the Air Line Pilots Association, made a detailed study of the necessary qualifications for pilots. As a result of this study they recommended to the authority responsible for civil aviation that no women should be employed in the cockpit of airline planes.

Largely because air line pilots cannot be replaced by women special consideration is given to requests for deferment of men in this classification.

Miss Elizabeth Christman
National Women's Trade Union League of America

We may as well face a little more graciously and realistically the fact that more and more women will be called into jobs which they have never done before. Perhaps we should do some missionary work among the Railroad Brotherhoods in order to change their uncompromising attitude against women coming into that field of work.

The clause just read by the representative of the Brotherhood of Railroad Trainmen and bearing on the admission of women into the Union and which is to be incorporated into the Union contracts is one of the finest pieces of sex discrimination that I have heard in a long time. Surely that provision is not in harmony with Trade Union principles, and what he and I as Trade Unionists have been

taught to believe, and have worked for. I want to call attention to the fact that some employers discriminate against women by paying them a wage below that paid to men. Are the Trade Union men now going to join some of these employers in discriminating against women by refusing them equality of membership. To me, as a life-long Trade Unionist, such an attitude does not make sense. I appeal to you for cooperation. Let us see to it that all Trade Unionists, whether men or women, stand together and practice the principles for which our movement stands.

Miss Olive Dennis
Baltimore and Ohio Railroad

I am much concerned, for it looks as if the capabilities of women are being disparaged by some of the speakers during this conference. As a matter of fact, women have something unique to contribute to transportation. The Baltimore & Ohio has had a long and satisfactory experience with the employment of women in a wide variety of jobs.

There are many jobs in the railroad service that women can do as well as men, many that they can do better. For instance, women cleaners do a neater job than most men cleaners do in cars, offices and railway stations.

Women should be given consideration in terms of filling a job in the post-war period as well as the present. They should be made to feel that they may be needed after the war just as they are needed during this emergency. Recruitment of women might be much easier if they felt that as soon as hostilities cease they would not be displaced. They should be considered, as men are, on the basis of their skills, aptitudes, and ability to do the job.

The B. & O. has found that women make very satisfactory workers; they are reliable and conscientious, willing to work, and many of them need the work.

State Laws and Women Workers

By MARY ANDERSON
Director, Women's Bureau
U. S. Department of Labor

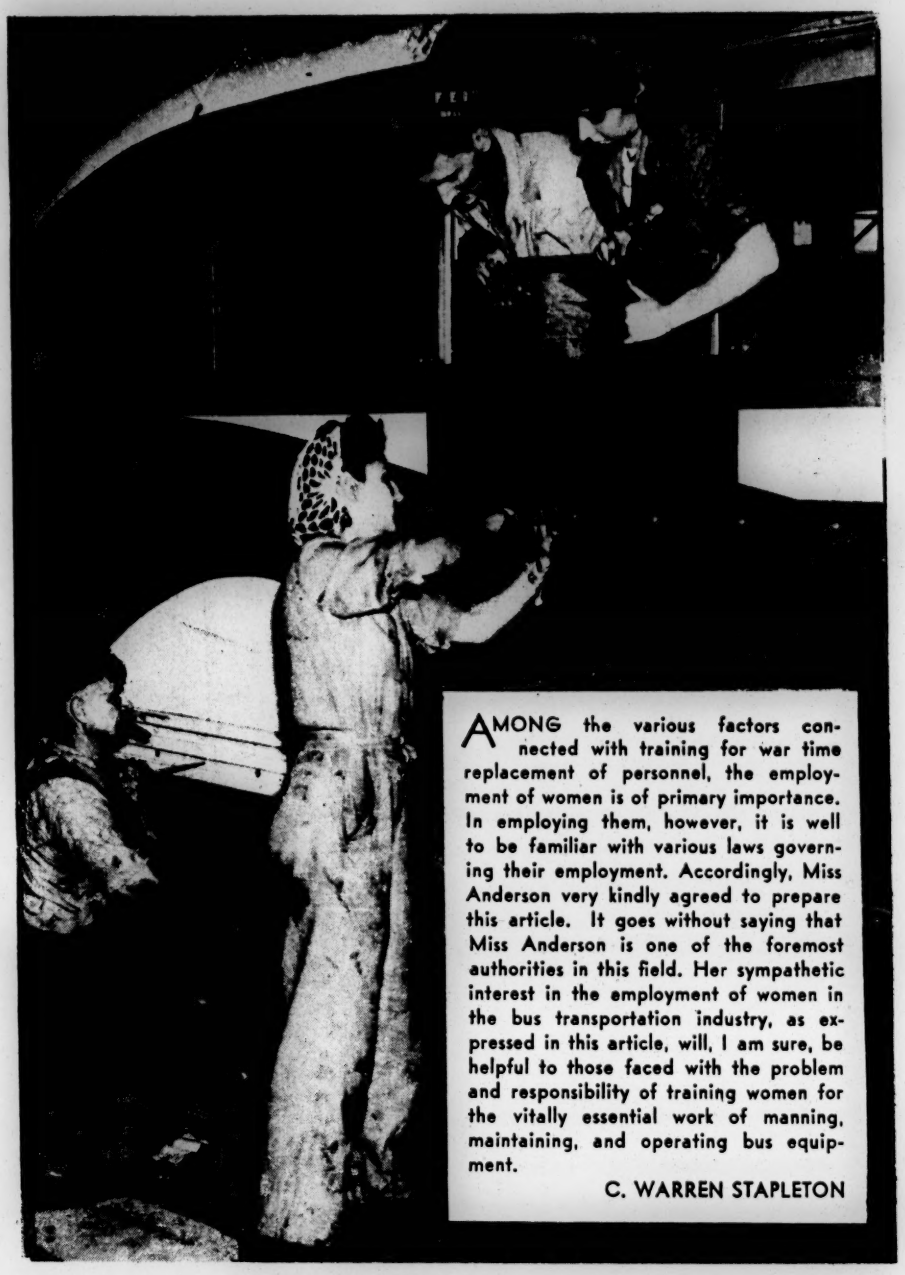
This is the fourth article in the series "Training . . . Key to the Skilled Help Shortage," prepared by C. Warren Stapleton, Training Specialist, Apprentice and Training Service, War Manpower Commission.

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By **MARY ANDERSON**
Director, Women's Bureau
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This is the fourth article in the series "Training . . . Key to the Skilled Help Shortage," prepared by C. Warren Stapleton, Training Specialist, Apprentice and Training Service, War Manpower Commission.



AMONG the various factors connected with training for war time replacement of personnel, the employment of women is of primary importance. In employing them, however, it is well to be familiar with various laws governing their employment. Accordingly, Miss Anderson very kindly agreed to prepare this article. It goes without saying that Miss Anderson is one of the foremost authorities in this field. Her sympathetic interest in the employment of women in the bus transportation industry, as expressed in this article, will, I am sure, be helpful to those faced with the problem and responsibility of training women for the vitally essential work of manning, maintaining, and operating bus equipment.

C. WARREN STAPLETON

WITH WOMEN the major source of available labor supply in the bus transportation industry today, it is becoming increasingly important for bus companies to know the laws affecting their employment, especially in mechanical work and in the heavier tasks normally performed by men.

State labor laws for women may be classified in three principal groups: (1) Laws regulating women's hours of employment; (2) Laws regulating working conditions or prohibiting certain hazardous employment; (3) Laws providing for the establishment of minimum wages.

Bus companies which have customarily employed women as cleaners, restaurant workers, in other service occupations, and in offices, are already acquainted with applicable minimum-wage regulation in the states in which they operate. It is believed that the new types of jobs which women are entering in the bus transportation field will be little affected by such regulation, inasmuch as minimum-wage rates have been established chiefly for the occupations in which women are customarily engaged and which are traditionally low paid. Thus, the highest minimum-wage rate now in force in any state is $18 for a 40-hour week. It is expected that bus transportation companies will pay women the rate for the job, as is now the general practice in industry, so their wages will be well above the legal minimum.

State hour legislation for women has for its express purpose protection of the health and well-being of women workers, and all states but five have maximum-hour legislation. Employers unfamiliar with state hour laws for women may be surprised to learn that in some states the law gives legal sanction to maximum daily or weekly hours which they know from their own experience are too long for efficient operation. It should be stated at the outset, therefore, that some of these laws were enacted years ago and establish standards which industry has long since discarded as in excess of human capacity and unproductive.

Many employers voluntarily adopt hour schedules which safeguard the health and efficiency of their employees. Experience has shown that standards which protect workers' health also make possible the greatest efficiency and result in greatest output. The health and efficiency of workers in the bus transportation industry are matters of special importance because they affect directly the safety of the public. For this reason, bus companies which expect to employ women should be interested not merely in

the precise legal requirements of the various states in which they operate but also in standards generally recognized as most satisfactory for women's employment.

The Women's Bureau, on the basis of its continuous experience with the employment of women from World War I to the present time, recommends the following basic standards for effective employment of women in the war period: An 8-hour day, with adequate rest periods and at least 30 minutes' time off for lunch; a work week of 48 hours or less; at least one day off in seven. Work schedules based on these standards insure the women workers' greatest efficiency over an extended period of time.

The hour schedules recommended by the Women's Bureau for women in all occupations have also been recommended for workers in war plants, both men and women, by the eight government agencies chiefly responsible for maximum war production (War Department, Navy Department, Maritime Commission, War Manpower Commission, War Production Board, Public Health Service, Labor Department, Commerce Department). Early in 1942, these agencies issued a joint statement of policy endorsing the 8-hour day, 48-hour and 6-day week, and 30-minute midshift meal period, stating that experience has shown these standards to be best for sustained maximum output. This policy was subsequently endorsed by the Office of Defense Transportation.

Laws establishing a maximum 8-hour day as a standard for women in some or all occupations are now in effect in 18 states and the District of Columbia; a maximum work week of 48 hours or less in 23 states and the District of Columbia; one day's rest in seven in 23 states and the District of Columbia. (See accompanying charts.) Twenty-five states and the District of Columbia require an interval for meals. In other words, in more than half the states in which women's maximum hours of employment are regulated by law, the standard 48-hour week which the Women's Bureau recommends and which industrial experience has proved most satisfactory is now the legal requirement. Fifteen states prohibit, and two others regulate, specified types of employment during certain hours of the night for women 21 and over.

Maximum-Hours and Day-of-Rest Laws

State hour laws vary as to industries covered. Some are of general coverage, and apply to any "gainful occupation" with specific exclusions. Others specify certain occupations without reference to any particular industry. In general, women employed by bus transportation companies may be said to be covered by a state law which expressly covers the transportation industry, or by a law which does not exclude this industry, but covers any "gainful occupation", or by a law which covers the specific occupations in which workers in this industry are employed.

Coverage Of All Women Bus Employees

	Hours Per Day	Hours Per Week	Days Per Week	
Arizona	8	48	6	13-hour over-all day
California	8	48	6	13-hour over-all day in restaurant
Dist. of Col.	8	48	6	.....
Illinois	8	48	6	.....
Louisiana	8	48	6	.....
Nevada	8	48	6	12-hour over-all day
Ohio	8	48	6	10-hour over-all day
Utah	8	48	...	12-hour over-all day
Pennsylvania	8	44	5½	10-hour over-all day
North Dakota	8½	48	6	.....
Arkansas	9	54	6	.....
Idaho	9	..	...	.....
Massachusetts	9	48	6	.....
Missouri	9	54	...	.....
New Mexico	8	48	...	.....
Oklahoma	9	54	...	.....
Texas	9	54	...	.....
Wisconsin	9	50	...	.....
Maine	...	54	...	.....
Oregon	10	60	...	.....
South Dakota	10	54	...	.....
Tennessee	10½	57	...	.....

In addition to laws limiting maximum daily and weekly hours and providing for a weekly day of rest, 17 states have laws or orders regulating or prohibiting the employment of women 21 and over during certain hours of the night. These laws cover only specifically enumerated occupations. Frequently included are three occupations in which women are likely to be employed by bus transportation companies — mechanical, office, and restaurant work. One or more of these occupations are covered by night-work laws in the following states (the prohibited or regulated hours appearing in parentheses):

Connecticut—mechanical, restaurant (10 p.m.–6 a.m.)

Delaware—mechanical (11 p.m.–6 a.m.); telephone and telegraph office or exchange, and restaurant (8-hr. maximum for work between 11 p.m. and 7 a.m.)

Maryland—mechanical (8-hour maximum for work between 10 p.m. and 6 a.m.)

Massachusetts—mechanical (10 p.m.–6 a.m.)

New Hampshire—manual or mechanical (8, 48-hour maximum for work on more than 2 nights a week between 8 p.m. and 6 a.m.)

New York—workshop (10 p.m.–6 a.m.); restaurant not in hotel (12 p.m.-6 a.m.)

Ohio—ticket sellers (10 p.m.–6 a.m.)

Wisconsin—restaurant workers (8, 48-hour maximum for work on more than 1 night a week between 8 p.m. and 6 a.m.); other workers (6:30 p.m.–6 a.m.)

Another type of special provision for women are the meal period laws now found in 25 states and the District of Columbia. The length of time required for meals by these laws varies. Meal period provisions applicable to one or more occupations (usually mechanical, restaurant, or office in the bus transportation industry) may be summarized as follows:*

[1] (1) *30 minutes or less:* Arkansas, California, Delaware, Kansas (20 minutes), Kentucky, Maryland, Nebraska, Nevada, New Jersey, New Mexico, North Carolina, North Dakota, Ohio, Pennsylvania, Utah; (2) *45 minutes:* Delaware, District of Columbia, Louisiana (dinner), Massachusetts, New York, Oregon, Washington; (3) *1 hour:* Maine, New York, Washington, Wisconsin.

Many of the laws set a maximum daily number of consecutive hours beyond which further employment is prohibited unless a meal period of the specified length is given. The purpose of these laws is not merely to give the worker food but to allow her a short break in daily routine. Experience has shown that rest and an opportunity to relax are almost as important as food in preventing fatigue of women workers.

The preceding data on maximum hour, day of rest, and night-work and meal period laws relate to the basic provisions of these laws. The following states have suspended operation of some or all of these provisions for all employees in certain industries for the duration: California, Indiana, North Dakota, and Texas. In many other states, emergency provisions—either contained in the hour laws or existing independently of them—have been invoked by state labor departments for the purpose of authorizing individual employers to employ women longer hours during short emergency periods. The procedure in effect in most States is as follows:

(1) The employer makes a request to the state labor department for exemption from specified legal provisions during an emergency period; (2) The state labor department investigates the need for an exemption, looking into such factors as labor shortage, training facilities, efficiency of operation. If the exemption is granted, it applies only to specified employees and operations and is of limited duration. To date, the states in general have confined the granting of exemptions to war-production industries. All of the states have granted night-work exemptions in these industries. Few states have relaxed provision of the day-of-rest laws to permit 7-day continuous operation.

Laws Regulating Working Conditions

At the request of ODT, in August 1942, the Women's Bureau drew up

* Length of lunch hour varies by occupation in Delaware, Maine, New York, Washington and Wisconsin.

recommended working condition standards for the employment of women in specific types of work in the transportation industry. In the bus transportation field, the bureau believes that operation of intercity buses, or of local buses in congested metropolitan area, is a suitable occupation only for women of exceptional physical strength.

Operation of a bus requires great muscular strength and is a very heavy job even for a man. If it becomes necessary to use women in this type of work, special medical examinations should be given. Where women are employed in this capacity, the following health needs should be met:

1. Need for good posture seats;
2. Need for regular hours, regular meal periods, regular shifts;
3. Need for adequate facilities for rest and food at terminals.

Standards recommended by the bureau for shop work may be briefly summarized as follows:

1. Prevention of accidents through (a) machine guarding; (b) good plant housekeeping; (c) instruction in safe practices.
2. Adequate protection against hazards of fumes.
3. General plant sanitation including: (a) Adequate washing facilities; (b) adequately equipped lunch room, dressing room, and rest room; (c) sanitary drinking facilities; (d) separate toilets for women; (e) ventilation.
4. In-plant medical supervision.
5. Avoidance of strain through: (a) installation of lifting devices; (b) instruction in safe methods of lifting; (c) physical examinations related to type of work.

The Women's Bureau is prepared to furnish employers with detailed information on training women workers in safe methods of lifting.

Weight-Lifting Laws and Regulations

Laws incorporating working conditions standards as outlined in the preceding paragraphs and recommended by the Women's Bureau, usually apply equally to men and women. However, with respect to weight-lifting, states have recognized that women are peculiarly subject to injury and special restrictions have been set up surrounding women's employment at work of this kind.

In California, Massachusetts, Michigan, Ohio, Oregon, Pennsylvania, Utah and Washington, women may not perform tasks that involve the lifting or carrying of heavy weights.

Laws which apply to women's employment in bus transportation set specific maximum loads as follows:

California:
25 pounds maximum for lifting;
10 pounds up and down stairways of 5 feet or over.

Michigan:
35 pounds maximum for lifting;
20 pounds ascending stairs.

Ohio:
25 pounds maximum for lifting.

Oregon:
25 pounds maximum for lifting;
15 pounds for carrying more than 10 feet.

Utah:
30 pounds maximum for lifting;
15 pounds for carrying.

Prohibited Employment for Women

Six states (Connecticut, Massachusetts, Missouri, New York, Vermont, and Washington) by law prohibit the employment of women for a specified period before and after childbirth. The period during which women may not be employed is 4 months before and 6 weeks after childbirth, in Washington; 4 weeks before and 4 weeks after, in Connecticut; 3 weeks before and 3 weeks after, in Missouri; 2 weeks before and 4 weeks after, in Massachusetts and Vermont; and 4 weeks after, in New York.

Nine states (Colorado, Kansas, Michigan, North Dakota, Oklahoma, Oregon, Pennsylvania, Washington and Wisconsin) prohibit the employment of women under conditions variously described as detrimental to their health, safety, morals or welfare.

Laws prohibiting women's employment in one or more specific occupations are found in all except 22 states and the District of Columbia. The states in which no such prohibition exists are: Delaware, Florida, Georgia, Idaho, Iowa, Kansas, Kentucky, Maine, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, North Dakota, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, and West Virginia.

In the 26 states that have laws prohibiting employment in specific occupations, the occupation most commonly prohibited for women is mining. Prohibitions which appear to have some application to the bus transportation industry may be summarized as follows: (1) Cleaning moving machinery: prohibited for women in Louisiana, Minnesota, and Missouri; (2) Trucking: prohibited in Ohio and Pennsylvania; (3) Employment as express driver, baggage handler, freight handler: prohibited in Ohio; (4) Work on moving abrasives: prohibited in Michigan, New York and Ohio.

The present discussion of the application of labor laws to employment of women by bus companies has been concerned solely with state laws. Bus companies engaged in interstate commerce will undoubtedly have a further question: How the employment of women in occupations covered by regulations of the Interstate Commerce Commission under the Federal Motor Carrier Act of 1935 (U. S. C. Title 45, Ch. 8) will be affected by state labor laws for women.

Although the Interstate Commerce Commission is authorized under that act to establish maximum hours for all employees whose activities affect the safety of operation, to date the commission has regulated hours of service only for drivers and helpers. There is no question but that state hour laws for women would apply to occupations for which the commission up to this time has not issued regulations.

The Women's Bureau has made a special study of the application of state laws to the interstate commerce field, and would be glad to receive questions and comments from employers interested in having more detailed information concerning this subject, or concerning any standards or laws discussed in this article.

The accompanying tables show the extent of coverage of women in the bus transportation industry by state laws. Full particulars on this subject may be obtained from the appropriate State Department of Labor or from the Women's Bureau, U. S. Department of Labor, Washington, D. C.

Coverage of Specific Occupations

(The first figure in each column indicates Hours Per Day; the second figure, Hours Per Week; and the third figure, Days Per Week)

	Mechanical	Workshop	Office	Cleaners	Janitors	Restaurant	Telephone	Telegraph
Colorado	8	.....	.....	.....	.....	8-48-6	.....	.....
Kansas	.....	.....	.....	8-48	8-48	8-48	.....	.....
Montana	8	.....	.....	.....	.....	8	8	8
New York	.....	8-48-6	.....	.....	.....	8-48-6	.....	48-6
Pennsylvania	.....	.....	.....	.....	.....	48-6	.....	.....
Oregon	.....	.....	8-44-6	8-44-6	8-44-6	8-44-6	8-44	8-44
Washington	8	.....	8-48-6	.....	.....	8 6	.....	.....
Wyoming	8-48 (12-hr. overall day)	.....	.....	.....	.....	8-48	.....	.....
Maine	9-54	9-54	.....	.....	.....	.....	.....	.....
Michigan	.....	9-54	9-54	.....	.....	9-54	.....	.....
Rhode Island	9-48	.....	.....	.....	.....	.....	.....	.....
Vermont	9-50	.....	.....	.....	.....	.....	.....	.....
Virginia	.....	9-48	.....	.....	.....	9-48	.....	.....
Delaware	10-55-6	.....	.....	.....	.....	10-55-6	10-55-6	10-55-6
Indiana	10-6	.....	.....	.....	.....	.....	.....	.....
Kentucky	10-60	.....	.....	.....	.....	10-60	10-60	10-60
New Hampshire	10½-54	.....	.....	.....	.....	.....	.....	.....
New Jersey	.....	.....	.....	.....	.....	10-54-6	.....	.....

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DEPARTMENT OF LABOR

OFFICE OF THE SOLICITOR

WASHINGTON

WOMEN'S BUREAU
AUG 6 1942
DEPARTMENT OF LABOR

August 6, 1942

To: Miss Anderson

From: Warner W. Gardner

In Re: Labor Standards as to Women Employees in the Railroad Services

I have your memorandum of August 5. Mr. Casey of my office will undertake the preliminary work as follows: We will survey the laws of the states and digest the provisions relating to minimum wages and hours of work for women employees of railroads, including also any legislation encountered in this survey which is confined to other forms of transportation, but without attempting to make the latter research exhaustive. We will examine the Federal legislation and regulations of the Interstate Commerce Commission with respect to minimum wages, hours of work, and safety and health requirements for women employees of all common carriers. We will pay particular attention to the relation of these Federal regulations to existing state statutes.

When this work is completed, which will take from ten days to two weeks, Mr. Casey and I will consult with Professor Chamberlain and he will then be in a position to give you such advice as you should like.

If this program does not meet your needs, please inform me and we will make the necessary adjustments.

Copy sent to all Labor Commrs
replies in Turner files

Copy

U. S. Department of Labor
WOMEN'S BUREAU
Washington

March 24, 1943

Mr. Albert H. Kruse, Commissioner
Montana Department of Agriculture,
Labor and Industry
Helena, Montana

Attention: Mr. Henry A. Yeager

My dear Mr. Kruse:

This is in reply to your letter of March 8, concerning coverage by the Montana hour law for women, of the employment of Mrs. Madge H. Cooper as telegraph operator for the Great Northern Railroad. Your letter states that you believe the Montana hour law does not apply to this worker's employment because the Federal Hours of Service of Railroad Employees' Act of 1907 (45 U.S.C., Sec. 61-64) would necessarily supersede the State hour law in its application to the interstate transportation field. You also call attention to the fact that Mrs. Cooper's employment is not covered by the hour provisions of the Federal Wage-Hour Law (the Fair Labor Standards Act).

I am very glad to have this opportunity to reply to your request for our comments on the various points discussed in your letter. The question you raise - whether State hour laws can be enforced to cover women employed by interstate railroads, or whether, on the other hand, State hour laws are superseded with respect to such workers by the Federal Hours of Service Act - is one to which the Women's Bureau has given considerable study and attention. Your letter recognizes the value to women workers of State laws establishing moderate working hours and shows a sympathetic understanding of the desirability of enforcing such laws for women workers generally. You will be glad to know, therefore, that the Women's Bureau was able last fall to have a special study on this question conducted through the Office of the Solicitor of Labor, and that we were subsequently advised that there is strong legal support for enforcing State hour laws to cover women employed in the interstate railroad field.

This study involved research through leading cases to determine the trend of recent judicial interpretation. Conclusions which were reached may be summarized as follows: Federal law will supersede State law in the interstate commerce field only where it is the clear intent of Congress to supersede State law. With specific reference to the relation between the Federal hours of service law and State hour laws for women, the Federal law was clearly enacted for an entirely different purpose than the State laws: the Federal law was designed to protect the safety of the public who are transported by railroads; the State law was designed to protect the health and welfare of women employees. Since the purpose of the two laws are different, it is reasonably certain that Congress in passing the Federal hours of service law did not intend to supersede State laws protecting the health of women. Further, Congress has made no special regulation covering the wages and hours of women

and children, but has left this subject to the States as a field it did not wish to cover. The Women's Bureau was accordingly advised that for these reasons, State hour laws for women are legally enforceable in the interstate railroad field and women so employed are entitled to their protection.

With respect to coverage of such employment by the Fair Labor Standards Act, your letter makes the point that railroad employees are expressly exempt by section 13 (b) (2) of the Act from coverage of the hour provisions of section 7. However, as you know, the FLSA does not set any maximum workweek but simply provides for payment of overtime for all hours in excess of 40 per week. In other words, the exemption in sec. 13 simply excuses railroads from paying the overtime rates required by sec. 7; and it has no bearing whatever on maximum hours of work and does not conflict in any way with the Montana hour law.

You are, of course, familiar with section 18 of the FLSA, the so-called "savings clause," which expressly preserves State hour laws establishing a maximum workweek lower than the Fair Labor Standards Act. Since the FLSA sets no maximum workweek but merely requires overtime pay, the Montana law necessarily establishes a lower maximum workweek, and is expressly preserved by the Federal law. This point is well stated in an opinion of the Solicitor of Labor directed to the Attorney General of Illinois, regarding the effect of the FLSA on the Illinois 8-hour law, with which you are doubtless familiar.

Recent experience of other State agencies has shown that it is more satisfactory from an administrative standpoint, as well as more equitable to the women workers affected, to keep coverage under a State hour law as broad and general as possible and to issue permits to work longer hours in individual cases only, after investigation has shown an exception to be justifiable and necessary. Maintenance of general coverage as a matter of State policy is particularly desirable in the interstate transportation field, because the Federal Hours of Service Law applies to only a limited number of employees. The courts have given a very restricted meaning to the phrase "connected with the movement of trains," and the Federal law would not apply to workers in railway shops, restaurants, laundries, and other service occupations in terminals. Such workers would in all cases be entitled to the protection of State law applicable to their employment. Any general exemption of railroad workers as such would be unfair to the vast majority of such workers. On the other hand, by making coverage the general rule, their health and efficiency would be safeguarded.

In adopting a policy of general coverage of women railroad workers, the State department would not be obliged, nor would it be advisable, to apply the law rigidly in all cases, without regard to the circumstances. Cases will arise, as in that of Mrs. Cooper, where investigation will show unquestionably good grounds for making an exception. I hope in such cases Montana will continue to follow the policy you adopted in connection with Mrs. Cooper's request for exemption, i.e., investigation of the circumstances and decision of the case on its merits, followed by an individual exemption directed to the worker affected.

Many State agencies which did not grant exemptions before the war are now doing so in hardship cases in war industries, finding authority either in the State law or in the emergency powers of the Governor. In the future, State agencies will undoubtedly have many requests for employment of women by interstate railroads beyond the hours established by the State hour law, and the policy of granting individual exemptions could also be followed in these cases. In this way, it seems to me, the needs of the war emergency can be adequately met and at the same time the vast majority of women railroad workers can be assured reasonable working hours through the application of the State law.

Sincerely yours,

Ma:AA:MNG

Mary Anderson, Director.

STATE OF TEXAS
BUREAU OF LABOR STATISTICS
CAPITOL STATION
AUSTIN
8

JOHN D. REED
COMMISSIONER

OUR FILE_____

March 31, 1943.

WOMEN'S BUREAU
APR 5 1943
DEPARTMENT OF LABOR

Miss Mary Anderson
Director, Women's Bureau
U. S. Department of Labor
Washington, D. C.

Dear Miss Anderson:

This will acknowledge receipt of your letter of March 27 with attached copy of letter from you to Mr. Albert H. Kruse, Commissioner of the Montana Department of Agriculture, Labor and Industry.

Please be advised that we have had this question come up several times previously in Texas and I am attaching Opinion No. O-4760 from our Attorney General with reference to women clerks. Of course, this opinion was written prior to the enactment of our new hour law for women, copy of which is also attached, and for your information, I am enclosing Opinion No. O-5154 by our Attorney General with reference to the proper application of this new law.

You will note in the first opinion that those women "actually engaged in or connected with the movement of any train are exempt from the provisions of our State law."

Yours very truly,

John D. Reed

John D. Reed, Commissioner
Bureau of Labor Statistics

JDR/c

Held: Hour Law covers ry. women

THE STATE OF TEXAS, OFFICE OF THE ATTORNEY GENERAL, Austin, October 2, 1942.

Honorable John D. Reed, Commissioner, Bureau of Labor Statistics, Austin, Texas.

Dear Sir:

Opinion No. O-4760. Re: Validity of Texas Women's Hour Law as applied to the employment of women clerks by railroads engaged in doing business in interstate commerce.

In your recent letter addressed tothis department you state that various railroads operating within the State of Texas and doing business in interstate commerce are employing many women in their offices. Places in which you are interested are those where women are employed in the various accounting departments such as car record clerks, who make up, or assist in making up, various periodical reports. More particular duties include the operation of various tabulating and accounting machines, the work being of a statistical nature.

You request the opinion of this department as to whether the Texas Act regulating the hours of labor of women employed by railroads in the types of work above mentioned apply to such women when the railroads so employing them are engaged in doing business in interstate commerce. If the Texas Act does apply in such cases, then you wish to know if such Act has benn superseded by the Federal Hour of Service Act or the Federal Railway Labor Act, wherein an agreement is entered into between the railroad and such women employees with respect to hours of service pursuant to said Act.

The Texas Act referred to was adopted in 1915 and is now Articles 1569 to 1572, inclusive, of the Texas Penal Code as amended in 1933, being commonly referred to as the Women's Labor Law. Article 5169 reads in part as follows:

> "No female shall be employed:
>
> "1. In any factory, mine, mill, workshop, mechanical or mercantile establishment, hotel, restaurant, rooming house, theater, moving picture show, barber shop, beauty shop, road side drink and/or food vending establishment, telegraph, telephone or other office, express or transportation company, or any State institution, or any other establishment, institution or enterprise where females are employed, for more than nine (9) hours in any one (1) calendar day nor more than fifty-four (54) hours in any one (1) calendar week."

Some related provisions follow but the quotation above is thought to be sufficient for this purpose.

Obviously the employment of women whose duties are of the kind and type which you mentioned are included within the Texas Act. In the absence of Federal legislation in conflict therewith, the Texas Act is applicable.

In the United States Supreme Court case of Erie Railroad v. New York, 233 U.S. 671, 58 L. Ed. 1149, 34 S.Ct. 756 (1914) the court stated:

> ". . . The relative supremacy of the State and national power over interstate commerce need not be commented upon. Where there is conflict, the state legislation must give way. Indeed, when Congress acts in such a way as to manifest its purpose to exercise its constitutional authority, the regulating

power of the state ceases to exist. . . (citing authorities)

Therefore the question here is not as to the power of Congress to regulate and to exlusively occupy the field covered by the Texas Women's Labor Law as it may apply to women employed by railroads engaged in doing business in interstate commerce, but whether it has, in fact, done so.

The Federal Act of March 4, 1907, C. 2939, 24 Stat., 1415, 45, U.S.C.A., Sections 61 and 62, referred to as the Hours of Service Act regulates the number of hours certain employees engaged in doing business in interstate commerce may work. In carefully chosen words the Act described an employee as a person who is "actually engaged in or connected with the movement of any train," and the hours of service feature of the Act only applies to such described persons. Manifestly, then the Federal Hours of Service Act, being limited within its scope, does not apply to women employed as accountants, bookkeepers, clerks, nor to general office assistants, such as are mentioned in your letter, as they are not "actually engaged in or connected with the movement of any train."

In an effort to prevent interruption of interstate commerce by strikes or lockouts resulting from disputes between carriers and their employees, Congress enacted the Railway Labor Act, the Act of May 20, 1926, c. 347, 44 Stat. 577, as amended by the Act of June 21, 1934, c. 691, 48 Stat. 926, 1185, and the Act of June 25, 1936, c. 804, 49 Stat. 1921, 45 U.S.C.A., Sections, 151-163.

In determining whether the Railway Labor Act was designed to regulate the hours of women employees of railroads engaged in doing business in interstate commerce we must look to the provisions of the Act and the authorities wherein that Act has been construed.

In Virginian Ry. Co. v. System Federation No. 40, (Va. 1937) 57 S. Ct. 592, 300 U.S. 515, 81 L. Ed. 789, the United States Supreme Court said:

> "The power of Congress over interstate commerce extends to such regulations of the relations of rail carriers to their employees as are reasonably calculated to prevent the interruption of interstate commerce by strikes and their attendant disorders. Wilson v. New, 243 U.S. 332, 347, 348, 61 L. ed. 755, 773, 774, 37 S. Ct. 298, L.R.A. 1917E, 938, Ann. Cas. 1918A, 1024. The Railway Labor Act, § 2, declares that its purposes, among others, are 'To avoid any interruption to commerce or to the operation of any carrier engaged therein,' and 'to provide for the prompt and orderly settlement of all disputes concerning rates of pay, rules or working conditions.' The provisions of the Act and its history, to which reference has been made, establish that such are its purposes, and that the latter is in aid of the former. What has been said indicates clearly that its provisions are aimed at the settlement of industrial disputes by the promotion of collective bargaining between employers and the authorized representative of their employees, and by mediation and arbitration when such bargaining does not result in agreement. It was for Congress to make the choice of the means by which its objective of securing the uninterrupted service of interstate railroads was to be secured, and its judgment, supported as it is by our long experience with industrial disputes, and the history of railroad labor relations, to which we have referred, is not open to review here.
>
> "The means chosen are appropriate to the end sought and hence are within the congressional power. . ."

The Railway Labor Act fails to mention "hours of service" of employees of railroads. It might therefore be contended that Congress, in enacting the Railway Labor Act, was not unmindful of the Hours of Service Act, previously enacted, which regulated the number of hours certain railroad employees might work. To have permitted hours of service of railroad employees to be a matter subject to dispute between railroads and their employees in the Railway Labor Act would have been to have completely nullified many of the effective provisions of the Hours of Service Act. This, manifestly, Congress did not intend to do.

If Congress, in enacting the Railway Labor Act, had intended to regulate hours of service it would have been an easy matter to have expressed this intention in clear, distinct and unambiguous language. Since Congress has not expressly manifested its purpose to exercise its constitutional authority to regulate hours of service in the Railway Labor Act, it then remains to look for such regulation by implication. The primary basis for the contention that Congress intended to regulate hours of service in the Railway Labor Act is found in Section 151a of the Act as follows:

> "The purposes of the chapter are: . . (4) to provide for the prompt and orderly settlement of all disputes concerning rates of pay, rules, or working conditions; . . ."

In Missouri Pac. R. Co. v. Norwood, 42 F. (2d) 765, a bill was filed seeking to enjoin the Attorney General of the State of Arkansas and other prosecuting attorneys of that State from prosecuting the plaintiff railroad for violation of the "full crew" train statute of that state governing the operation of freight trains. The railroad's contention was that Congress had occupied the field by enacting the "Railway Labor Act." There the court said:

> "Plaintiff contends that Congress has occupied the field of these Arkansas statutes in the Labor Act of 1926 (44 Stat. 577 (45 USCA § 151-163)). It is argued that Congress, in that act, took over control of 'working conditions' of employees of interstate carriers and that 'working conditions,' as there used, includes the number of men required in train and switching crews. In a sense, the number of men required to perform a task is one of the 'working conditions' of that task. However, such meaning is not necessarily included in such expression. Therefore, it is necessary to construe this act to determine if such meaning is to be found therein. This act is the latest of a line of congressional legislation having the same general purpose. Prior acts are the Act of June 1, 1898 (30 Stat. 424), Acts of July 15, 1913 (38 Stat. 103 (45 USCA § 101-125)), and the Transportation Act of 1920, § 300-316 (41 Stat. 456, 469 (45 USCA § 131-146)). The purpose of each of these acts was to prevent interruption of interstate commerce by strikes or lockouts resulting from disputes between carriers and their employees. The general method of each of these acts is to provide a medium or machinery for peaceful, orderly settlement of such disputes. In each the subject-matter of dispute is defined in general terms; these terms are similar in all of the acts. The Acts of 1898 (30 Stat. 424, 425) and of 1913 (38 Stat. 103, 104) include in such definition 'conditions of employment. 'The Transportation Act (41 Stat. 456, 470, 471) includes 'working conditions' and 'standards of working conditions'. The Railway Labor Act of 1926 (44 Stat. 577, 578, 580, 582) includes 'working conditions.' Obviously, these terms in each of these acts have the same general meaning. They mean such conditions affecting the work of the employees as might

> be the subject of agreement between the carriers and the employees. This could not include matters of statutory duty, for such are withdrawn from the volition of either party. Also, if Congress intended to occupy the field in the Labor Act of 1926, it had already, by the use of similar language, done so in 1898, yet the Supreme Court, in 1911 (Chicago, R. I. & P. R. Co. v. Arkansas, 219 U. S. 453, 31 S. Ct. 275, 55 L. Ed. 290) and 1916 (St. Louis, I. M. & S. R. Co. v. Arkansas, 240 U. S. 518, 36 S. Ct. 443, 60 L. Ed. 776) decided these very statutes of Arkansas were in a field not occupied by national legislation." (Emphasis ours)

The United States Supreme Court in affirming the decree of the Federal District Court in the Norwood case, supra, (288 U. S. 249, 75 L. Ed. 1010) said:

> "No analysis or discussion of the provisions the Railway Labor Act of 1926, U.S.C.A. Title 45, Sec. 151, is necessary to show that it does not conflict with the Arkansas statute under consideration."

The regulation of hours of service of labor of women employees is clearly within the police power of the State of Texas. We find nothing in the provisions of either the Hours of Service Act or the Railway Labor Act tending to impair the validity of the Texas Women's Labor Law as it may affect the employment of women engaged in the types of work mentioned. "The intention of Congress to exclude states from exerting their police power must be clearly manifested." Reid v. Colorado, 187 U.S. 137, 148, 23 S. Ct. 92, 47 L. Ed. 108; Savage v. Jones, 225 U. S. 501, 533, 32 S. Ct. 715, 56 L. Ed. 1182.

It is therefore the opinion of this department, and you are so advised, that the Federal Railway Labor Act does not impair the validity of the Texas Women's Labor Law, but that same is valid and enforceable insofar as it may affect the hours of service of women employed by railroads engaged in doing business in interstate commerce with the exception of those women, who, in isolated instances may be "actually engaged in or connected with the movement of any train." The women employed in offices performing the types of work mentioned are not within the exception.

Yours very truly, ATTORNEY GENERAL OF TEXAS, By E.G. Pharr, Assistant.

EGP:LM; APPROVED OCT. 2, 1942, GERALD C. MANN, ATTORNEY GENERAL OF TEXAS.

State of Rhode Island and Providence Plantations

Department of Labor
Division of Women and Children
State House, Providence
9

WILLIAM L. CONNOLLY
DIRECTOR

MARGARET F. ACKROYD
CHIEF OF DIVISION
AND
COMMISSIONER OF MINIMUM WAGE

WOMEN'S BUREAU
MAY 31 1943
DEPARTMENT OF LABOR

May 27, 1943

Miss Mary Anderson, Director
Women's Bureau
U. S. Department of Labor
Washington, D. C.

My dear Miss Anderson:

Mr. Connolly turned over to me your information from the Solicitor's Office advising that state hours laws apply to women employed in the railway industry and that the application of state laws to this employment does not conflict with the federal regulations for purposes of safety in transportation.

I received this information just in time to apply it to a situation here in Providence in the baggage room of the New York, New Haven and Hartford Railroad where a number of women are employed checking freight and baggage. They were working in excess of the 48-hour week and the 9-hour day and since the inspector from this division went to investigate the case armed with your statement considerable time was saved in bringing them into compliance. The manager raised the question of state coverage in this instance.

Thank you for sending the information along.

Very truly yours,

Margaret F. Ackroyd

Margaret F. Ackroyd, Chief
Division of Women and Children

MFA:ETM

The Industrial Commission of Arizona

Phoenix, Arizona

WOMEN'S BUREAU
APR 7 1943
DEPARTMENT OF LABOR

RAY GILBERT, CHAIRMAN
L. C. HOLMES, MEMBER
C. EARL ROGERS, MEMBER

April 1, 1943

Miss Mary Anderson, Director
Women's Bureau, U. S. Department of Labor
Washington, D. C.

My dear Miss Anderson:

Thank you for your letter of March 25th, addressed to Mr. Holmes as chairman of the Industrial Commission, enclosing copy of a letter which you have written to the Montana State Labor Department in reply to questions from that State agency, concerning the applicability of the Montana hour law in the case of Mrs. Madge H. Cooper's employment for the Great Northern Railroad. We note especially your comment that "there is strong legal support for enforcing State hour laws to cover women employed in the interstate railroad field."

Arizona's coverage under the women's 8-hour law is quite broad and, as you know, there has been no relaxation of the provisions of this statute.

Yours very truly,

Ray Gilbert

Ray Gilbert, Chairman

lg

April 1, 1943

Dr. Joseph P. Chamberlain
510 Kent Hall
Columbia University Law School
New York, N. Y.

My dear Dr. Chamberlain:

The Women's Bureau receives an increasing number of requests for information concerning the application of State hour laws to women in the transportation field, particularly in connection with their employment by interstate railroads. I am inclosing a copy of a letter which we recently sent to the various State Commissioners, recommending that State hour laws be enforced to cover women in this field, and stating that ample legal support exists for adopting such a policy.

We believe it would also be useful to publish a short article which would explain the legal ground for this position, based on the material incorporated in your various memoranda to us last fall. I am inclosing a copy of the tentative draft which Miss Angus has prepared. I shall appreciate it very much if you will look it over and suggest any changes or additions which appear to you desirable. May I also thank you again for your very great help in conducting the legal research for us?

Sincerely yours,

Inclosure
WA:AA:mlc

Mary Anderson, Director.

Columbia University
in the City of New York

LEGISLATIVE DRAFTING RESEARCH FUND
510 KENT HALL

WOMEN'S BUREAU
APR 6 1943
DEPARTMENT OF LABOR

April 5, 1943

Miss Mary Anderson, Director
Women's Bureau
U. S. Department of Labor
Washington

Dear Miss Anderson:

Getting your letter made me feel sorry that I have been forced to give up going to Washington regularly, as your letter brings out the importance of the problem of changeover to women in the transportation and other fields and the very interesting problems which I had the pleasure of discussing with you and Miss Angus. I am badly tied up just now in work here for the Mayor and in other ways, but I hope that I may hold my relationship with you and that you will call on me when you feel I can be useful.

I think that the memorandum and the letter, in respect to the application of state hour laws to women employed by railroads, are both good. I have only one small modification to suggest in the memorandum. In the third paragraph on the first page I think it would be well to bring out a little more fully the fact that the government standards were made to apply to all persons. I would suggest modifying the third sentence in the second paragraph beginning with the words "For this reason" and ending with the word "policy" to read as follows: "The United States Government has recognized that this is true as applying to all workers and has approved as the government's wartime policy the standards of the eight-hour day, six-day and forty-eight-hour week."

Your letter to Mr. Kruse seems to me to take the right line, that the state labor commissioners may well recognize the need for relaxation of the women's labor laws where this relaxation would really benefit the war effort and would not prejudice too far the health of the individual women or the group of women involved. In view of what I understand to be the experience here in New York, I think you are wise in calling attention to the second point, as you did.

Please remember me to Miss Angus.

Very sincerely yours,

Joseph P. Chamberlain.

Joseph P. Chamberlain

Original Sent to Dr
March 26, 1943 Chamberlain

APPLICATION OF STATE HOUR LAWS TO WOMEN EMPLOYED BY RAILROADS.

As women take over "men's jobs" in the transportation field, and perform work heretofore almost exclusively carried on by men, the question of the application of State hour laws for women to women employed in the railroad industry assumes a new importance. Many of these jobs and the conditions under which they are performed require not only a special type of skill, but, in addition, physical strength and endurance. If State hour laws do not apply, women who work in railroad yards, in the shops, or at other railroad occupations now mentioned as available for women may find themselves not only doing heavier work but also working longer hours. Women have demonstrated through their employment in other fields that they can successfully fill jobs similar to those in which they will be employed on railroads, if they are not employed for too long hours.

State hour laws for women were first enacted because State legislatures recognized that the physical well-being of women is a matter of public concern. As early as 1907, the U. S. Supreme Court affirmed the validity of such legislation, upholding the Oregon 10 hour statute with the following declaration: 1/

> "That women's physical structure...places her at a disadvantage in the struggle for subsistence is obvious. ...By abundant testimony of the medical fraternity, continuance for a long time upon her feet at work, repeating this from day to day, tends to injurious effects upon the body, and as healthy mothers are essential to vigorous offspring, the physical well-being of women becomes an object of public interest and care in order to preserve the strength and vigor of the race."

Today, the standards established by the best of these laws are an 8 hour day, a work week of 48 hours or less, and ~~requires~~ one day's rest in seven. Experience has shown that these standards, by safeguarding the worker's health, make possible her highest efficiency and result in the greatest output. ~~For this reason, the standards of the 8 hour day, 6 day and 48 hour week, have become the Government's wartime policy.~~ Early in 1942, the eight Government agencies chiefly responsible for the success of the war effort 2/ recommended in the interest of maximum war production that employers limit working hours as far as possible to 8 hours a day, 48 hours a week, and give each worker at least one day's rest in seven.

As far as the Federal Government is concerned, however, the 8 hour day, 6 day and 48 hour week are only a recommendation, and do not have the force of law. The Fair Labor Standards Act (29 U. S. C., secs. 201-219 and amendments) does not limit the length of the workweek for any employees, but simply requires overtime pay for work beyond 40 hours a week. Moreover, this Act specifically

1/ Muller v Oregon, 208 U. S. 412
2/ War Department, Navy Department, Maritime Commission, War Manpower Commission, War Production Board, Commerce Department, Public Health Service, Labor Department.

The United States Government has recognized that this is true as applying to all workers and has approved as its government's war-time policy the standards of the 8 hour day, 6 day + 48 hr week.

exempts railroad employees from the overtime pay requirement. The Federal Hours of Service of Railroad Employees Act of 1907 (Title 45 U. S. C. secs. 61-66) limits the workweek for "employees...actually engaged in or connected with the movement of any train", but in doing so it establishes a lower standard - i.e., permits longer working hours - than the standard recommended in the Government statement of policy. On the State level, also, State Hours of Service laws which regulate the railroad industry as such are modeled after the Federal law, and in general establish lower standards than State hour laws for women. Hence, the hour standards recommended by the Government agencies previously referred to are legally enforcible to protect women railroad workers only to the extent that State hour laws for women apply to this field.

Recognizing the importance of this question if women in large numbers are to work in the railroad industry both during and after the war, the Women's Bureau, in the fall of 1942, instituted a legal research study through the Office of the Solicitor of Labor 3/ to determine whether State hour laws are enforcible to cover women railroad workers. The applicability of State hours laws was considered in relation to (1) The Federal Hours of Service of Railroad Employees Act; and (2) State Hours of Service laws regulating the transportation industry as such.

It was, of course, understood at the outset that the question of coverage of women in railroad occupations by State hour laws cannot be categorically answered, as coverage in a particular case would depend on the wording of the law and the circumstances of the case. The opinion arrived at as the result of the study, however, was that in general State hour laws for women applicable to the transportation industry are enforcible for women employed in the railroad industry notwithstanding the existence of Federal and State laws regulating railroad employees as such. The reasoning on which this opinion is based is here presented as concisely, and in as non-technical language, as possible.

1. The Federal law:

Since the Constitution grants the interstate commerce power to the Federal Government, it is sometimes assumed that the Federal Hours of Service of Railroad Employees Act must necessarily supersede State laws in their application to the interstate commerce field, including State hour laws for women. A long line of U. S. Supreme Court decisions, however, have established the principle that a Federal law in the exercise of the interstate commerce power does not supersede a State statute in the exercise of its police power unless the will of Congress to do so is clearly manifest. 4/

3/ The study was directed by Professor Joseph P. Chamberlain of the Columbia University Law School, attached to the Office of the Solicitor of Labor as a special adviser.

4/ Atlantic Coastline v. Georgia, 234 U. S. 280
Pennington v. Georgia, 163 U. S. 299
Smith v. Alabama, 124 U. S. 465

This rule was stated by the U. S. Supreme Court in a 1937 decision in the following language: 5/

> "...The principle is thoroughly established that the exercise by the State of its police power, which would be valid if not superseded by Federal action, is superseded only where the repugnance or conflict is so direct and positive that the two acts cannot be reconciled or consistently stand together. ...The application of this principle is strongly fortified where the State exercises its power to protect the lives and the health of its people."

In a 1940 decision, the Court stated: 6/

> "As a matter of statutory construction, Congressional intention to displace local laws in the exercise of the commerce power is not, in general, to be inferred, unless clearly indicated by those considerations which are persuasive of the statutory purpose. This is especially the case where public health and safety are concerned."

That Congress in passing the Railroad Hours of Service Act of 1907 did not intend to exclude State laws which regulate hours of employment of women in order to safeguard their health is indicated by the fact that the Federal law was enacted for a different purpose: The Railroad Hours of Service Act was designed as a safety regulation for the purpose of protecting the safety of persons and property in interstate commerce and not for the purpose of protecting the health of railroad employees. Congress believed that railroads could not be safely operated by employees who work in excess of the number of hours there specified and who did not have the stated number of consecutive hours of rest.

This point was brought out clearly in a 1910 case in which the Federal Hours of Service Act was in question. In upholding the provisions of the Act, the Court said: 7/

> "Congress may enact laws for the safeguarding of the persons who are transported in (interstate) commerce, and of those who are employed in transporting them. The fundamental question here is whether a restriction upon the hours of labor of employees who are connected with the movement of trains in interstate commerce is comprehended in this sphere of authorized legislation. This question admits of but one

5/ Kelly v. Washington, 302 U. S. 1
6/ Maurer v. Hamilton, 309 U. S., 598
7/ B. & O. v. I. C. C., 221 U. S. 612
Ry.

> answer. ...In its power suitably to provide for the safety of employees and travelers Congress was not limited to the enactment of laws relating to mechanical appliances, but it was also competent to consider, and to endeavor to reduce, the dangers incident to the strain of excessive hours of duty on the part of engineers, conductors, train dispatchers, and other persons embraced in the class defined by the Act."

A different purpose is that which resulted in the laws regulating the hours of employment of women. The object of such laws is to protect the health of woman workers by prohibiting their employment beyond a reasonable number of hours. Protection of the health of women is recognized as a matter of justifiable special concern to the State. 8/

State laws which safeguard the health of women therefore come within the class of cases which sustain State laws if they are not in conflict with Federal laws. 9/ Thus the Federal Hours of Service of Railroad Employees Act establishes a ceiling of hours beyond which employment of railroad employees covered by the Act would endanger the public safety and which is therefore prohibited. State hour laws establishing shorter hours for women employees in order to protect the health of women as a group do not interfere with this Federal purpose. It is clearly possible for the Federal law and the State hour laws "to be reconciled and consistently stand together."

The study concluded, therefore, that State hour laws for women are not in conflict with the Federal Hours of Service Act and, consequently, that State hour laws applicable to work in the railroad industry are enforcible for women employed by railroads in occupations covered by the Federal Act.

2. Conflicts between State laws:

The question of whether State laws regulating hours of employment of women will apply in the face of another State statute regulating working hours in the railroad industry may also be considered from the standpoint that the two types of law were intended for a different purpose.

State hour of service laws, like the Federal law after which they were copied, were established as safety regulations, designed to protect the safety of property and the public, rather than to protect the health of employees to whom they applied. In this way, State laws regulating the railroad industry as such differ, as does the Federal law, from State laws safeguarding the health and well-being of women workers.

8/ Muller v. Oregon, 208 U. S. 412 (1907)
Radice v. New York, 264 U. S. 292 (1924)

9/ Missouri Pacific v. Norwood, 283 U. S. 249
Missouri Kansas & Texas Ry. v. Haber, 169 U. S. 613
Missouri Pacific v. Larrabee Mills, 211 U. S. 623

According to legal principles, where two acts regulate the same or a similar subject, they must be construed, if possible, so that both can take effect. 10/ This principle was applied by the U. S. Supreme Court in a case which involved two California statutes, one limiting the hours of labor of all pharmacists to 10 hours a day, 60 hours a week, and the other limiting the hours of employment of women to 8 hours a day, 48 hours a week. The women's hour law was enacted subsequent to the general law. The Court said that the 10-hour statute was necessary for the protection of the public, as it was important that the work of a pharmacist should not be performed "by those suffering from over-fatigue." The legislature might in addition, however, limit the hours of women to 8 to safeguard the health of such workers. In this way, the two acts were harmonized and the women pharmacists could not be employed more than 8 hours a day. 11/ In the same way, State hour laws for women may be reconciled with State laws regulating hours in the transportation industry.

3. Recommendation.

On the basis of this study, the Women's Bureau recommends that State agencies enforce State hour laws, except those in which the transportation industry as such is specifically exempt, to women in the railroad industry. Adoption of such a policy would extend the protection of State hour laws to women who enter the railroad industry in occupations new to women. Although some of the new types of work come within the scope of the Federal Hours of Service Act - inasmuch as the worker is "actually engaged in or connected with the movement of trains" - the Women's Bureau study shows a sound legal basis for enforcing State hour laws to cover women so employed.

10/ State v. Brown, 334 Mo. 781; Great Western Insurance Co. v. Martin, 183 Ia. 1001; People v. Commissioners, 86 Colo. 249; People v. Wallace, 291 Ill. 465; Re James, 99 Vt. 265; State v. The Equality Savings & Loan Society, 334 Mo. 781; Indiana Truck Co. v. Hurry Up Broadway Corp., 220 Ky. 521; Riley v. Forbes, 193 Calif. 740.

11/ Bosley v. McLaughlin, 236 U. S. 385.

STATE OF MONTANA
DEPARTMENT OF AGRICULTURE, LABOR AND INDUSTRY

ALBERT H. KRUSE
COMMISSIONER

HELENA, MONTANA,
April 1, 1943

WOMEN'S BUREAU
APR 6 1943
DEPARTMENT OF LABOR

Miss Mary Anderson, Director
Women's Bureau
U. S. Department of Labor
Washington, D. C.

My dear Miss Anderson:

Thank you for your letter of March 24, in which you explained in detail the application of State maximum hour laws for women by interstate railroads. I certainly appreciate the statements, comments and comparisons you have made, and as such you have clarified many questions I have had in my mind from time to time.

Due to the lack of flexibility in practically all our Montana 8-hour laws, it would be very difficult to grant exceptions for specific individual cases--Governor Sam C. Ford has informed me verbally that he does not have the power to make relaxations although such may be unquestionably justified. I shall, however, as in the past overlook such violations whenever the investigation of the circumstances will prove to be of benefit to both the employer and employee and other conditions such as the war effort--the decision, as mentioned in your letter should be based on the merits of the case. Since neither this Division nor the Governor has the power to relax a law not having an emergency clause, I shall ignore a violation of a particular law if such is completely justified, based on merit, at least for the duration of the war.

I realize that using too much compulsion on employers to gain compliance of a labor law, using the old method of "cracking down", court actions and so on, just because the wording of a law was technically violated, will not only jeopardize our present labor legislation but also may in some cases retard the war effort. Consequently one has to in most all cases use good common sence.

Although we have in the past sponsored wage-hour legislation and have failed to get such enacted, I do hope Montana as well as other States will eventually have little "State Wage-Hour Laws" comparable to the FLSA, since I believe such legislation is the answer to many problems confronting both employers and employees. Although maximum hour laws, daily and weekly, are desirable and certainly better than no legislation for labor, they are nevertheless

not of much value when compared to combined minimum wage, maximum hours--daily and weekly, and overtime provision laws.

Sincerely yours,

Henry A. Yaeger

Henry A. Yaeger, Inspector in Charge
Division of Labor

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March 24, 1943

Mr. Henry A. Yeager
Inspector in Charge
Division of Labor
Montana Department of Agriculture,
Labor and Industry
Helena, Montana

My dear Mr. Yeager:

This is in reply to your letter of March 8, concerning coverage by the Montana hour law for women, of the employment of Mrs. Madge H. Cooper as telegraph operator for the Great Northern Railroad. Your letter states that you believe the Montana hour law does not apply to this worker's employment because the Federal Hours of Service of Railroad Employees' Act of 1907 (45 U.S.C., Sec. 61-64) would necessarily supersede the State hour law in its application to the interstate transportation field. You also call attention to the fact that Mrs. Cooper's employment is not covered by the hour provisions of the Federal Wage-Hour Law (the Fair Labor Standards Act).

I am very glad to have this opportunity to reply to your request for our comments on the various points discussed in your letter. The question you raise - whether State hour laws can be enforced to cover women employed by interstate railroads, or whether, on the other hand, State hour laws are superseded with respect to such workers by the Federal Hours of Service Act - is one to which the Women's Bureau has given considerable study and attention. Your letter recognizes the value to women workers of State laws establishing moderate working hours and shows a sympathetic understanding of the desirability of enforcing such laws for women workers generally. You will be glad to know, therefore, that the Women's Bureau was able last fall to have a special study on this question conducted through the Office of the Solicitor of Labor, and that we were subsequently advised that there is strong legal support for enforcing State hour laws to cover women employed in the interstate railroad field.

This study involved research through leading cases to determine the trend of recent judicial interpretation. Conclusions which were reached may be summarized as follows: Federal law will supersede State law in the interstate commerce field only where it is the clear intent of Congress to supersede State law. With specific reference to the relation between the Federal hours of service law and State hour laws for women, the Federal law was clearly enacted for an entirely different purpose than the State laws: the Federal law was designed to protect the safety of the public who are transported by railroads; the State law was designed to protect the health and welfare of women employees. Since the purposes of the two laws are different, it is reasonably certain that Congress in passing the Federal hours of service law did not intend to supersede State laws protecting the health of women. Further, Congress has made no special regulation covering the wages and hours of women

and children, but has left this subject to the States as a field it did not wish to cover. The Women's Bureau was accordingly advised that for these reasons, State hour laws for women are legally enforceable in the interstate railroad field and women so employed are entitled to their protection.

With respect to coverage of such employment by the Fair Labor Standards Act, your letter makes the point that railroad employees are expressly exempt by section 13 (b) (2) of the Act from coverage of the hour provisions of section 7. However, as you know, the FLSA does not set any maximum workweek but simply provides for payment of overtime for all hours in excess of 40 per week. In other words, the exemption in sec. 13 simply excuses railroads from paying the overtime rates required by sec. 7; and it has no bearing whatever on maximum hours of work and does not conflict in any way with the Montana hour law.

You are, of course, familiar with section 18 of the FLSA, the so-called "savings clause," which expressly preserves State hour laws establishing a maximum workweek lower than the Fair Labor Standards Act. Since the FLSA sets no maximum workweek but merely requires overtime pay, the Montana law necessarily establishes a lower maximum workweek, and is expressly preserved by the Federal law. This point is well stated in an opinion of the Solicitor of Labor directed to the Attorney General of Illinois, regarding the effect of the FLSA on the Illinois 8-hour law, copy of which I am enclosing.

Recent experience of other State agencies has shown that it is more satisfactory from an administrative standpoint, as well as more equitable to the women workers affected, to keep coverage under a State hour law as broad and general as possible and to issue permits to work longer hours in individual cases only, after investigation has shown an exception to be justifiable and necessary. Maintenance of general coverage as a matter of State policy is particularly desirable in the interstate transportation field, because the Federal Hours of Service Law applies to only a limited number of employees. The courts have given a very restricted meaning to the phrase "connected with the movement of trains," and the Federal law would not apply to workers in railway shops, restaurants, laundries, and other service occupations in terminals. Such workers would in all cases be entitled to the protection of State law applicable to their employment. Any general exemption of railroad workers as such would be unfair to the vast majority of such workers. On the other hand, by making coverage the general rule, their health and efficiency would be safeguarded.

In adopting a policy of general coverage of women railroad workers, the State department would not be obliged, nor would it be advisable, to apply the law rigidly in all cases, without regard to the circumstances. Cases will arise, as in that of Mrs. Cooper, where investigation will show unquestionably good grounds for making an exception. I hope in such cases Montana will continue to follow the policy you adopted in connection with Mrs. Cooper's request for exemption, i.e., investigation of the circumstances and decision of the case on its merits, followed by an individual exemption directed to the worker affected.

Many State agencies which did not grant exemptions before the war are now doing so in hardship cases in war industries, finding authority either in the State law or in the emergency powers of the Governor. In the future, State agencies will undoubtedly have many requests for employment of women by interstate railroads beyond the hours established by the State hour law, and the policy of granting individual exemptions in emergencies could also be followed in these cases. In this way, it seems to me, the needs of the war emergency can be adequately met and at the same time the vast majority of women railroad workers can be assured reasonable working hours through the application of the State law.

Sincerely yours,

MA:AA:MNG

Mary Anderson, Director.

STATE OF MONTANA
DEPARTMENT OF AGRICULTURE, LABOR AND INDUSTRY

ALBERT H. KRUSE
COMMISSIONER

HELENA, MONTANA,
March 8, 1943

WOMEN'S BUREAU
MAR 12 1943
DEPARTMENT OF LABOR

Miss Mary Anderson, Director
Women's Bureau
U. S. Department of Labor
Washington, D. C.

Dear Miss Anderson:

Reference is made to an inquiry made by Mrs. Madge H. Cooper, Kalispell, Montana to Senator James E. Murray which was referred by Senator Murray to you for reply. Mrs. Cooper is employed as a telegraph operator, ticket agent and train dispatcher for the Great Northern Railway Company at Kalispell, Montana, and her inquiry to you et al, dealt with the problem whether or not she could legally be employed longer than eight hours per day when necessary.

No doubt this woman would not be protected by the Federal Wage-Hour Law, since she would probably come under the exemptions of Section 13 of the Act. In addition it seems to me that she would be covered by Section 62, of Title 45, U.S.C.A. (Mar. 4, 1907, c. 2939, Sec. 2, 34 Stat. 1416.) and note No. 19 on page 895 of the Volume headed "Employees Subject to Section - Generally." Since Federal law supersedes State law, this woman apparently would not be protected by Section 3076, R.C. M., 1935, as outlined in your letter of February 23, 1943 to Mrs. Cooper. Consequently I have advised Mrs. Cooper that our State law establishing the maximum hours for females in certain occupations (Section 3076, R. C. M., 1935) probably would not apply to her, she probably would, however, be covered by the above mentioned Federal statutes which would permit her to be employed nine hours per day and in cases of emergency up to 13 hours per day.

I sincerely do agree with statements in your letter to Mrs. Cooper and her complaint to us is the first complaint we have ever had where an employee wanted to work longer than eight hours and if he were not permitted to do so he was being discriminated against! There generally being reasons for such unusual complaints as Mrs. Cooper's, I did learn that her husband is the trainmaster for the Kalispell Division of the Great Northern railway company and since a part of his duties is to see that all trains run on schedule and so on, it was necessary to have his wife work nine hours and over occasionally--she, apparently, in turn in order to assist her husband, wanted specific permission to work longer than eight hours per day whenever necessary.

I realize that our labor laws should be flexible enough to permit employees to work overtime beyohd statute limitations in cases of certain emergencies--such as late trains in Mrs. Cooper's case, however, at the same time the employee should be further protected by requiring the employer to pay at least time and one-half the regular rate of pay for such overtime, be it either daily or weekly, whichever is the greater. None of our Montana labor laws outlines such provisions or flexibility. In fact Section 4 of Article XVlll, Labor, of the Constitution of Montana states in part: "A period of eight hours shall constitute a day's work in all industries, occupations, undertakings and employments, except farming and stock raising; ----", no provisions are made for overtime work, and incidently no penalizing clause has ever been enacted by our Legislatures for the violation of that part of Montana's Constitution. ---!

I am enclosing a copy of my letter to Mrs. Cooper and a copy of the Federal statutes that in my opinion she is covered by. I shall appreciate any comments you may have on this subject.

Very truly yours,

Henry A. Yaeger

Henry A. Yaeger, Inspector in Charge
Division of Labor

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Section 62, of Title 45, U.S.C.A.,:

"Hours of service limited.

It shall be unlawful for any common carrier, its officers, or agents, subject to sections 61-64 of this title to require or permit any employees subject to sections 61-64 of this title to be or remain on duty for a longer period than sixteen consecutive hours, and whenever any such employee of such common carrier shall have been continuously on duty for sixteen hours he shall be relieved and not required or permitted again to go on duty until he has had at least ten consecutive hours off duty; and no such employee who has been on duty sixteen hours in the aggregate in any twenty-four-hour period shall be required or permitted to continue or again go on duty without having had at least eight consecutive hours off duty; Provided, That no operator, train dispatcher, or other employee who by the use of telegraph or telephone dispatches, reports, transmits, receives, or delivers orders pertaining to or affecting train movements shall be required or permitted to be or remain on duty for a longer period than nine hours in any twenty-four-hour period in all towers, offices, places, and stations continuously operated night and day, nor for a longer period than thriteen hours in all towers, offices, places, and stations operated only during the daytime, except in case of emergency, when the employees named in the proviso may be permitted to be and remain on duty for four additional hours in a twenty-four-hour period on not exceeding three days in any week; Provided further, The Interstate Commerce Commission may after full hearing in a particular case and for good cause shown extend the period within which a common carrier shall comply with the provisions of this provisio as to such case. Mar. 4, 1907, c. 2939, Sec. 2, Stat. 1416."

Also note 19 on page 895 of the Volume, headed: "Employees Subject to Section - Generally."

Henry A. Yaeger, Inspector in Charge
Division of Labor

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March 8, 1943

Mrs. Madge M. Cooper
Kalispell
Montana

Dear Mrs. Cooper:

Reference is made to your letter of March 1, 1943, in which you asked if a Montana labor law in respect to maximum hours of eight per day, would apply to you as a telegraph operator for the Great Northern Railway in Kalispell, Montana.

After much study and consideration, I have come to the conculsion that our State law outlining the maximum hours females may be employed at not more than eight per day, would not apply to your case and employment. This decision was reached by cofferring with the Attorney General's office of Montana and much valuable information was received from Mr. Clift, one of the Attorneys for the Great Northern Railroad Co. in Montana.

It is my opinion that your working hours would be governed by the Federal Railway Act and I. C. C. regulations rather than by our State laws, consequently you would be permitted to work nine hours per day as outlined in your letter.

Very truly yours,

Henry A. Waeger, Inspector in Charge
Division of Labor

HW
cc- Mary Anderson
Women's Division
U. S. Department of Labor
Washington, D. C.

87

February 23, 1943

Miss Madge H. Cooper
Care of Great Northern Railway
Kalispell, Montana

My dear Miss Cooper:

Your letter of February 7th concerning your hours of employment as a telegraph operator for the Great Northern Railway was referred to the Women's Bureau for answer by the Hon. James E. Murray, U. S. Senator from Montana.

The 8-hour day limitation to which you refer is not a Federal law or ruling, but a provision of the Montana State law (Montana Revised Codes 1935, Sec. 3076). In its policy of limiting the maximum hours of women's employment, Montana is in accord with the overwhelming majority of other States. In fact, 43 States and the District of Columbia now have laws setting some limitations on women's hours, and nearly half of these provide for a maximum 8-hour day.

Industrial experience has demonstrated that an individual who is employed longer than 8 hours a day is subject to an accumulation of fatigue which makes him increasingly less efficient. This is especially true of women, many of whom perform not only work for which they are paid but endless household tasks as well.

The relation between hours of work and efficiency is now so well established that the 8 Government agencies responsible for maximum war production (War, Navy, Labor, and Commerce Departments, War Production Board, War Manpower Commission, Public Health Service, and Maritime Commission) early in 1942 issued a joint statement of policy urging employers in war industries to maintain an 8-hour day, 6-day and 48-hour week schedule for all workers, both men and women. We are sending you a copy of this statement. Although only a recommendation and without the force of law, the statement indicates the importance and value for all workers of an 8-hour working schedule as established in Montana by the 8-hour law for women.

There are, of course, occasional emergencies, such as the late trains you refer to in your letter, when employment longer than 8 hours may be necessary. In some States, the department which administers the Women's Hour Law is authorized to make exceptions in emergencies. If you would like to know whether an exception can be made under the Montana law applicable to your case, I suggest that you write to Mr. Albert H. Krouse, Commissioner, Department of Agriculture, Labor, and Industry, Helena, Montana. If we can give any additional information, either on the law or policy involved, please do not hesitate to call on us.

Sincerely yours,

Mary Anderson, Director.

MA:AA:
MHG

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80-M

February 23, 1943

Hon. James E. Murray
Senate Office Building
Washington, D. C.

My dear Senator Murray:

Inclosed is a copy of a letter written at your request to Miss Madge H. Cooper, Care of Great Northern Railway, Kalispell, Montana, in answer to her inquiry concerning the application of the 8-hour law to her employment as a telegraph operator.

We are very glad to have had an opportunity to be of service to you. If we can be of any further assistance, please do not hesitate to call upon us.

Sincerely yours,

MA:AA:MMC

Mary Anderson, Director.

United States Senate

February 13, 1943

Letter received from:
Miss Madge H. Cooper
c/o Great Northern Railway
Kalispell, Montana

Respectfully referred to
Miss Mary Anderson, Director
Women's Bureau
Department of Labor

---

with thanks for such favorable consideration as the communication herewith submitted warrants, and for a report thereon, to accompany return of inclosure.

By direction of James Murray

U. S. S.

9—3479

P.S. Kindly reply to Miss Cooper direct, sending me a copy of your reply together with the enclosure for my files.

Kalispell Montana.
Feby. 7th, I943

WOMEN'S BUREAU
FEB 15
DEPARTMENT OF ABOR

Hon James E.Murray.
Washington, D.C.

Dear Senator:-

I have worked as telegraph operator and ticket clerk on the Kalispell division of the Great Northern Railway since I907 and all during those years women employees enjoyed the same working agreements with the railroads and Order of Railroad Telegraphers as the men we were working with.

However it now seems that sometime during the fall of I942 the Government made a ruling that no women be allowed to work over eight hours, if this deduction correct the railroads will be forced to discriminate against us, This ruling seems altogether uncalled for in regard to railroads and employees who all along have had their own working agreements, and this especially now when all are called upon to do their utmost, and certainly every woman telegraph operator working for the railroads is taking the place of a skilled man who can be used to advantage elsewhere.

Our working agreement calls for an eight hour shift, but we are allowed to work nine hours without a violation, this at times being necessary account a relief operator being possibly a few minutes late or when trains late at stations where there is not continuous service and it is necessary to hold an operator overtime, or give them a call, which is also permissable, to take care of them.

I work at the telegraph and ticket office at Kalispell Montana, this town being located on a branch line of the Great Northern Railway, my hours are from 445pm until I245am, the office being closed from I245am until 845am. If trains late they must be met and taken care of as this is the terminal of the branch, It so happens that at present both operators working here are women, and the new ruling as to women not being able to work over eight hours places both us and the railroad in a tough spot.

At present account an unusually heavy snow fall in Montana and the main line conjested with heavy war traffic the passenger trains have been running unusually late necessitating a man be placed temporarily on duty here from I245am until 845am although no trains due at those hours unless very late, and if our working hours had not been affected by this new eight hour ruling, this man would be available for other service where he is badly needed account shortage of all employees, So kindly advise if this ruling really applies to women who work in the operating department of railroads, if not, I should appreciate a reply by collect Western Union,

Very truly yours
Care Great Northern Ry, Kalispell. Montana. Madge H. Cooper

DEPARTMENT OF LABOR

O. M. OLSEN, COMMISSIONER

State of Nebraska

DWIGHT GRISWOLD, GOVERNOR

LINCOLN

10

WOMEN'S BUREAU
APR 1 1943
DEPARTMENT OF LABOR

March 30, 1943

Mary Anderson, Director
Women's Bureau
U. S. Department of Labor
Washington, D. C.

Dear Madam:

I have before me, and have read with a great deal of interest, your letter of March 26th with which was enclosed a carbon copy of your letter of March 24th to the Commissioner of Labor at Helena, Montana, with reference to the applicability of the state law regulating hours of employment of women employed by the railway industry.

You say in effect in your letter to the Commissioner that state laws limiting the hours of work for women continue in force notwithstanding the provisions of Federal enactments applicable to the railroads.

I assume that you mean such state laws remain in force in such cases where there is no express provision in the state law exempting the railroads from the operation of the state act but in order that I might be sure of the true meaning of your letter may I refer you to the Nebraska Female Labor Law, particularly Section 48-205 thereof, which provides that the provisions of this section shall not apply to employees of public service corporations.

I have always held that this exemption relieves the railroads of any of the limitations or regulations contained within the act whether it be on train service, in the shops or offices of the railroad company, in terminal restaurants, railroad station lunch rooms or other employments by the railroad and the railroads themselves have claimed such exemption in Nebraska.

If in the course of your study of the laws referred to, or the research made by the office of the Solicitor of Labor referred to in your letter, you have found a way in which the Nebraska Female Labor Law may be made applicable to the employment of women by the railroad companies in Nebraska I would certainly appreciate any information or advice which you may offer in that connection as I have always felt that this exemption of the railroads is a bit out of line with a fair and impartial enforcement of the act with respect to all kinds of employment within the state.

Awaiting your reply with interest, I am,

Yours very truly,

O M Olsen

Commissioner of Labor

OMO/pje

COMMONWEALTH OF VIRGINIA
Department of Labor and Industry
COMMISSIONER'S OFFICE
THIRD FLOOR, FINANCE BUILDING
RICHMOND

TELEPHONE: 3-8766

JOHN HOPKINS HALL, JR.
COMMISSIONER

WOMEN'S BUREAU
APR 1 1943
DEPARTMENT OF LABOR

March 31, 1943

Miss Mary Anderson, Director
Women's Bureau
U. S. Department of Labor
Washington, D. C.

My dear Miss Anderson:

Thank you very much for your letter of March 27th addressed to Mr. Hall concerning the employment of women by the railway industry, and the enclosed copy of a letter written by the Women's Bureau to the State Labor Department of Montana.

We are very glad to have this information as it will be particularly helpful to us in enforcing our State hours law for women in this industry in cases where applicable.

Yours very truly,

Rose McMahon

(Mrs.) Rose McMahon, Director
Division of Women & Children.

RM/ae

State of North Carolina
Department of Labor
Raleigh

FORREST H. SHUFORD
COMMISSIONER

March 30, 1943

WOMEN'S BUREAU
MAR 31 1943
DEPARTMENT OF LABOR

Miss Mary Anderson, Director
Women's Bureau
United States Department of Labor
Washington, D. C.

Dear Miss Anderson:

Thank you for your letter of March 27 in which you enclosed copy of your letter of March 24 to the Commissioner of Labor of the State of Montana.

Unfortunately, the North Carolina Maximum Hour Law exempts from its provisions all employees of railroads, common carriers and public utilities subject to the jurisdiction of the Interstate Commerce Commission or the North Carolina Utilities Commission. Our Attorney General has ruled that these industries are completely exempt from our Maximum Hour Law, regardless of the fact that the Interstate Commerce Commission or the North Carolina Utilities Commission may or may not regulate hours of work. The way the Law is written it seems that the test of the exemption is whether either the State of Federal agencies have the power to exercise any jurisdiction over the industry.

Consequently, it will not be possible for us to regulate the hours of women who may accept employment with railroads.

Sincerely yours,

Forrest H. Shuford

Forrest H. Shuford,
COMMISSIONER.

Angus
Files

STATE OF MISSOURI
LABOR AND INDUSTRIAL INSPECTION
DEPARTMENT
JEFFERSON CITY

ORVILLE S. TRAYLOR
COMMISSIONER

March 29, 1943

WOMEN'S BUREAU
MAR 31 1943
DEPARTMENT OF LABOR

Miss Mary Anderson, Director
Women's Bureau
U. S. Department of Labor
Washington, D. C.

Dear Miss Anderson:

Thank you very much for your letter of March 26th, enclosing a copy of the letter from your Department regarding the effect of state hour laws on women employed by railroad companies.

A case of this sort has recently come to our attention, and we appreciate having this letter for reference.

Yours very truly,

Orville S. Traylor mr.

Orville S. Traylor
Commissioner of Labor

mr

Bureau
File

STATE OF SOUTH CAROLINA
DEPARTMENT OF LABOR
COLUMBIA

R. L. GAMBLE
COMMISSIONER

WOMEN'S BUREAU
MAR 31 1943
DEPARTMENT OF LABOR

March 29, 1943

Miss Mary Anderson, Director,
Women's Bureau,
U. S. Department of Labor,
Washington, D. C.

Dear Miss Anderson:

Have your letter of March 27th with enclosure relating to women employed by interstate railroads.

I appreciate your sending this clarification of State Laws when in conflict with Federal Laws. I know I shall find this helpful, especially during the War Emergency.

Sincerely yours,

R. L. Gamble

R. L. Gamble,
COMMISSIONER.

RLG/fp

A. V. LUNDGREN
COMMISSIONER
J. HERB WILSON
RESEARCH DIRECTOR

STATE OF KANSAS

DIVISIONS—
UNEMPLOYMENT COMPENSATION
WOMEN'S AND CHILDREN'S
FACTORY, MILL AND MINE
WAGE-HOUR
RESEARCH

LABOR DEPARTMENT

801 HARRISON
TOPEKA

WOMEN'S BUREAU
APR 3 1943
DEPARTMENT OF LABOR

April 1, 1943

Miss Mary Anderson, Director
Women's Bureau
U. S. Department of Labor
Washington, D. C.

Dear Miss Anderson:

I am very much interested in your letter of March 24, 1943, to Mr. Albert H. Kruse, Commissioner, Montana Department of Agriculture, Labor and Industry, dealing with the applicable federal and state laws concerning the employment of women on railroads.

I agree completely with your interpretation and although the railroads in this state have not begun using women in occupations other than clerical, it will be our policy to enforce the state law the same as for any other industry. I see no reason why railroads should not be subject to state regulations the same as any other interstate manufacturer or processor, and certainly our maximum hour regulations could not conflict in any way because of the complete lack of maximum hour regulations by federal law.

We have had but one request from railroads for an exemption to the state hour regulations for women. This occurred recently when the Union Pacific railroad applied for a permit to work waitresses in excess of the state regulations. After surveying the available labor supply and pointing out possibilities of staggering shifts, the permit was denied by this office and the railroad found it possible to adjust their procedure sufficiently to comply with the law.

I appreciate very much being informed on such conditions as they arise. It will certainly help us when similiar situations are presented in this state.

Sincerely yours,

A. V. LUNDGREN
Commissioner of Labor

AVL:bfs

Angus,

STATE OF MICHIGAN
DEPARTMENT OF LABOR AND INDUSTRY
LANSING

GEORGE W. DEAN, CHAIRMAN
COMMISSIONER OF LABOR

WOMEN'S BUREAU
APR 3 1943
DEPARTMENT OF LABOR

April 1, 1943

Miss Mary Anderson
Director, Women's Bureau
U.S. Department of Labor
Washington, D. C.

Dear Miss Anderson:

Your information in connection with women in railroad occupations is timely and will be helpful. At the moment I am working with representatives of the railroads and railroad organizations in an attempt to establish safeguards through a cooperative plan rather than depending on the inspection staff.

This plan has been worked out with regard to using minors as apprentices, and I shall be pleased to advise you when the next step is consummated.

Sincerely yours,

George W. Dean

George W. Dean, Chairman &
Commissioner of Labor

GWD:an

STATE OF NEW JERSEY
DEPARTMENT OF LABOR

JOHN J. TOOHEY, JR.,
COMMISSIONER OF LABOR

Trenton, N. J.
April 1, 1943

Miss Mary Anderson, Director
Women's Bureau
U. S. Department of Labor
Washington, D. C.

Dear Miss Anderson:

This will acknowledge receipt of your letter of March 26 pertaining to employment of females in various railroad occupations.

In New Jersey, such railroad female employees are not subject to the provisions of the labor law excepting only railroad work shops which are registered in this State as factories and, of course, in all classifications where minors under 18 years of age are involved. The material which you have attached to your letter has been found to be most interesting and furnishes us with an opportunity to learn of the experiences of other sections of the country and the methods and devices that are used to secure needed labor legislation.

Very truly yours

JOHN J. TOOHEY, JR.
COMMISSIONER OF LABOR

JJT:BHZ

State of New Hampshire

Office of

Bureau of Labor

Concord, N. H.

JOHN S. B. DAVIE
LABOR COMMISSIONER

April 1
1943

File No.

WOMEN'S BUREAU
APR 3 1943
DEPARTMENT OF LABOR

Miss Mary Anderson, Director
Women's Bureau
U. S. Department of Labor
Washington, D. C.

My dear Miss Anderson:

Acknowledge receipt of your letter of March 26 enclosing copy of letter you wrote to the State Labor Department of Montana for which I thank you. Have read the same with much interest.

Sincerely yours,

John S. B. Davie

D/A

Labor Commissioner.

W. A. PAT MURPHY, COMMISSIONER

JIM HUGHES, ASSISTANT COMMISSIONER

Files

STATE OF OKLAHOMA

DEPARTMENT OF LABOR

OKLAHOMA CITY, OKLAHOMA

March 31, 1943

WOMEN'S BUREAU
APR 2 1943
DEPARTMENT OF LABOR

Miss Mary Anderson, Director
Women's Bureau
U. S. Department of Labor
Washington, D. C.

My dear Miss Anderson:

We appreciate your letter of March 27, with copy of a letter which was recently written by your Bureau to the State Labor Department of Montana in answer to their questions on the subject of whether the state hour laws cover employees of railroad companies, etc.

The letter contains valuable information and we are placing it in our files for future reference.

Yours very truly,

W. A. Pat Murphy
Commissioner of Labor

WAPM/t

COPY

COPY
FOR YOUR INFORMATION

March 30, 1943.

Hon. A. C. DeBolt,
Chief Executive Officer for Trustee,
Oklahoma Railway Company,
P. O. Box 995,
Oklahoma City, Oklahoma

Dear Sir:

Have just received your very interesting letter dated today, advising that due to the emergency created by the War and the manpower shortage, it has been necessary that your company employ female street car and bus operators, as it is impossible for you to secure men to man these jobs; that the amount of work and the runs worked by these operators vary in length from approximately seven and a half to slightly over nine hours per day, therefore, in some cases it is necessary for the efficient operation of your industry for female operators to work slightly in excess of nine hours per day.

It is further noted that you would like to have our consent to an exemption for the duration of the war in order that you may be able to furnish adequate transportation to the war workers and others who are forced to use your service, and replying thereto wish to advise that we fully understand your problem and the emergency causing you to make the above request. Therefore, we assure you that it is not our policy or purpose to, nor do we believe it is the purpose of the law in question, to interfere with or retard the war effort in any manner, and further I assure you that this Department, nor any of our agents, will interfere with you or your company so long as the present emergency exists and you operate as outlined in your letter to me today.

Very sincerely,

W. A. Pat Murphy,
Commissioner of Labor.

WAPM/w

COPY

OKLAHOMA RAILWAY COMPANY

Robt. K. Johnston, Trustee

Box 995

Oklahoma City, Okla. March 30, 1943

Hon. Pat Murphy
Commissioner of Labor
Capitol Building
Oklahoma City

Sir:

Due to the emergency created by the war and the manpower shortage, it has been necessary that this company employ female street car and bus operators, as it is impossible for us to secure men to man these jobs.

The operation of a transportation system is entirely different from the operation of a factory or a mercantile establishment, as it is impossible to have all employees go to work at the same time and get off at the same time. The amount of work and the runs worked by these operators varies in length from approximately seven and a half to slightly over nine hours per day. According to our contract with the Amalgamated Association of Street, Electric Railway and Motor Coach Employees of American, female operators must take their turn working all runs with the men. Therefore in some cases it is necessary for the efficient operation of this vital industry for female operators to work slightly in excess of nine hours.

We would like to have your consent to an exemption for our industry for the duration of the war in order that we may be able to furnish adequate transportation to the war workers and others who are forced to use our service.

Yours respectfully,

(Signed) A. C. DeBolt

Chief Executive Officer for Trustee

ACD R

C
O
P
Y

OFFICE FOR EMERGENCY MANAGEMENT

WAR MANPOWER COMMISSION

WASHINGTON, D. C.

new address below - telephoned by Mrs. Curran WMC - Ex 3366

Chairman
PAUL V. McNUTT
FEDERAL SECURITY ADMINISTRATOR

March 20, 1943

WOMEN'S BUREAU MAR 24 1943 DEPARTMENT OF LABOR

Miss Mary Anderson
Director, Women's Bureau
Department of Labor
Washington, D. C.

Dear Miss Anderson:

A series of articles appearing in Bus Transportation, the national publication of the bus transportation industry, has been prepared by Mr. C. Warren Stapleton, transportation training specialist on our staff. Two articles have already been printed and an article on labor relations in training has been accepted for the coming issue. Copies of two of these articles are attached. I am sorry that I do not have an extra copy at hand of the second article which was on the training of women in the transportation industry. I will provide a copy of this article early next week.

In discussing subjects for the series with the editor, the advisability of an article on labor laws as they affect training for war-time operations in the bus transportation field was agreed upon. Since you are the outstanding authority on the subject of labor laws as they affect women in industry, I feel that an article of this kind would be most effective if it were to come directly from you and appear over your signature, with perhaps an introduction from Mr. Stapleton pointing it out as one of the series.

I would greatly appreciate it if you can arrange to have an article prepared by a member of your staff, or if this is not convenient, Mr. Stapleton can discuss the matter with one of your staff members, writing the article from the material secured and submitting it for your final approval. The editor's deadline on the article for the next issue is April 12.

Very truly yours,

Wm. F. Patterson - Ext. 3351

Att.

Wm. F. Patterson, Director
Apprentice-Training Service

Send reply to! Mrs. Curran = War Manpower Commission 8th Floor, 1778 - Pennsylvania Ave NW Ext. 3366



Training . . .

Key to the Skilled Help Shortage

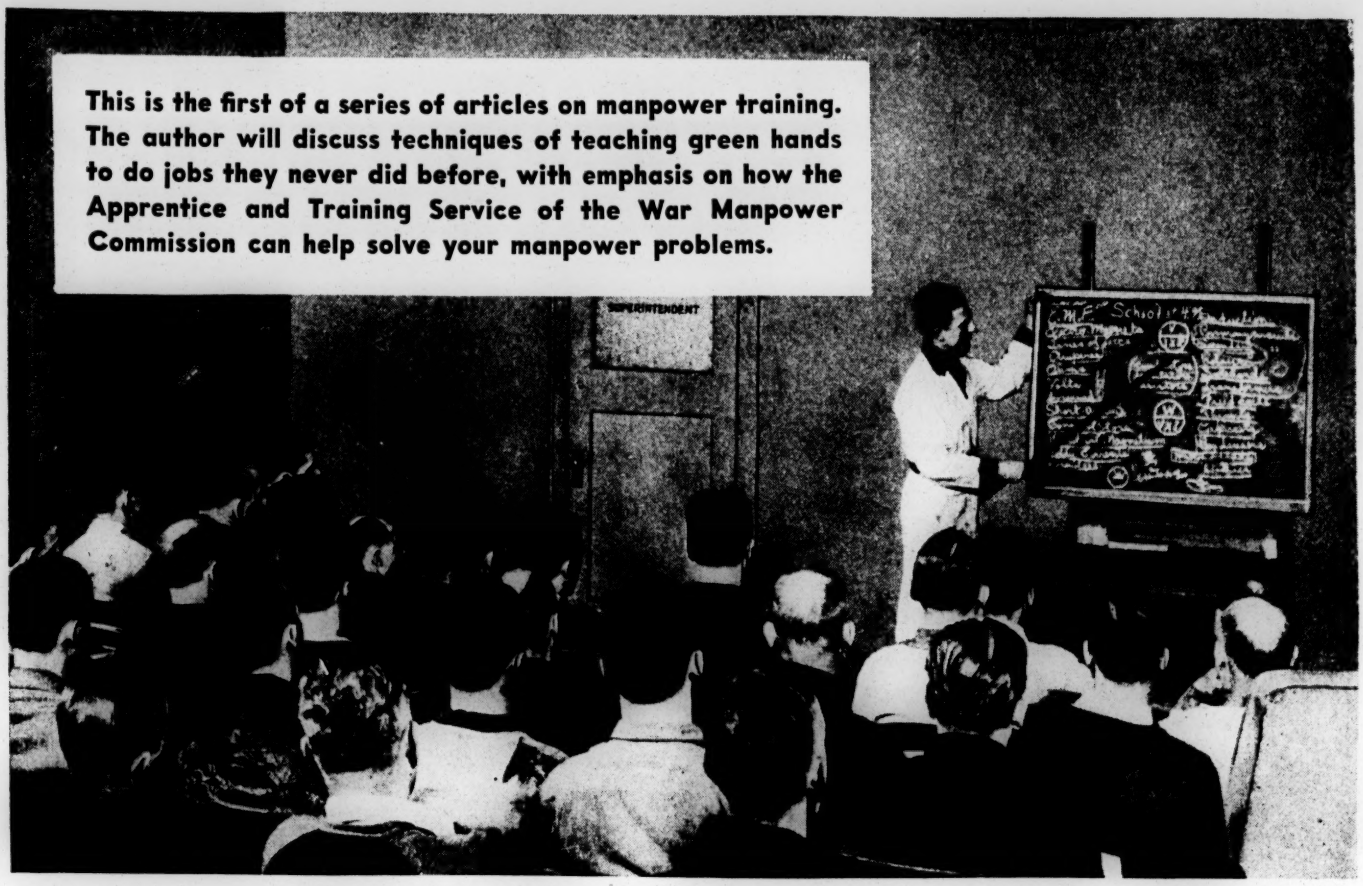
By C. WARREN STAPLETON, *Training Specialist, Apprentice and Training Service, War Manpower Commission.*

This is the first of a series of articles on manpower training. The author will discuss techniques of teaching green hands to do jobs they never did before, with emphasis on how the Apprentice and Training Service of the War Manpower Commission can help solve your manpower problems.

Reprinted from BUS TRANSPORTATION ✦ *February, 1943*

Training . . .

Key to the Skilled Help Shortage



This is the first of a series of articles on manpower training. The author will discuss techniques of teaching green hands to do jobs they never did before, with emphasis on how the Apprentice and Training Service of the War Manpower Commission can help solve your manpower problems.

By C. WARREN STAPLETON, *Training Specialist, Apprentice and Training Service, War Manpower Commission.*

THAT the bus transportation industry is a key part of the war program goes without saying. Buses must be kept rolling, and under conditions which the industry has never had to face before. How are we going to meet these conditions, and solve them? How are we going to keep equipment moving when it is groaning under the strain of unprecedented traffic? And how are we to obtain the personnel to move buses when the labor market is so restricted?

The purpose of these articles is to try to answer some of these questions which operators are asking themselves every day.

The bus industry from the start has been particularly hard hit by the draft. Employers and employees alike have felt that the manning of the Armed Forces was our first consideration and, even though the industry could in all justice request deferment for employees, bus owners and fleet operators were among the last of the recognized essential industries to avail themselves of the privilege of requesting deferments, however, this is becoming more and more necessary. The situation with respect to manpower will probably get worse before it gets better. Admittedly employees in bus transportation are among the most vulnerable to the draft. Employment requirements throughout the past have been such that a man qualifying for employment in the transport service was splendid material for the Armed Forces; this as a consequence, has made the industry one of those most affected.

Military necessity has required that bus companies transport untold thousands of men in the military service from one place to another. New plants, some of them in out-of-the-way places have risen overnight, and have made imperative the transportation of millions of war workers. At the same time traffic on regular runs has increased many times.

What can be done about it?

The war has shown that what, a year or two ago, would have been considered impossible, is now the kind of thing that is being done every day as a matter of course. Even though bus companies have lost veteran drivers, mechanics and supervisory and clerical help to Selective Service, ways have been found of getting the job done. In

these articles we hope to make available information and suggestions on how various companies are meeting the problem. In addition there will be explained how practical and common sense help can be obtained from experienced field representatives of various government agencies.

Owners have all made up their minds, or should have, that men vulnerable to the draft will not be permanently deferred. Realizing this, some companies have gone a long way in tapping hitherto ignored sources of labor supply to replace men inducted into the service. It will be necessary for all companies to start making plans for replacement if they have not already done so.

The first step suggested in planning a labor replacement program is upgrading to determine whether persons employed in one capacity can be advanced to a more important position. An attempt should be made also to obtain operators of small and less essential equipment and convert them into bus drivers. Many companies have been successful in converting office workers and shop helpers into operators. Extreme care must be used when this is decided upon. In the selection process, the importance of safety precautions, personal responsibility and reliability, ability to think and act in an emergency, physical stamina and ability to meet and deal with people should be emphasized. If this is done a great deal of serious difficulty will be avoided. Obviously, characteristics which might be tolerated in one type of job cannot be acceptable when the lives of many passengers or the legal and financial responsibility of the company may be jeopardized.

A dozen makeshifts may have to be adopted in order to meet the provisions of franchises and the terrific additional needs of the war emergency. It must be realized, however, that the industry is a permanent part of the national economy. Everything ought to be done to maintain the high standard of service which exists, not only that the best contribution can be made for the war effort, but because the vital bus industry should be kept in good working order for the post-war period.

The agency which I represent, the Apprentice and Training Service of the War Manpower Commission was established in 1934 for the purpose of promoting sound standards of training in the skilled trades. It works jointly, or separately with management and with labor organizations in developing sound training programs, so that, instead of "jacklegs," industry will have honest-to-God, all-around experienced craftsmen. Perhaps, incidentally, no industry is in greater need of first rate mechanics than transportation, particularly the bus and truck industry. It is not my intention to describe the success we have had during the last eight years in promoting sound training and in assisting industry in setting up practical programs. We feel, however, that had we gotten started sooner, and with an adequate staff, that the skilled worker situation at the present time would be much brighter.

The policies of the service are established by representatives of management and labor, men who have had long experience in training and who have been able to develop practices and procedures which remove apprenticeship and bonafide training from the realm of controversy.

The field staff is made up of approximately 160 men stationed in strategic points throughout the country, but concentrated particularly in the heavy industrial areas. The staff is made up of men who are experienced in industry, in training, in labor relations and in getting the job done, and I make no excuses for boasting a little about the calibre of the men with whom I work.

I should like to point out also that this agency has a close working relationship with the Office of Defense Transportation. For a time three of our field representatives, including myself, worked directly under Mr. Otto Beyer, ODT Director of Transport Personnel.

Since the beginning of the emergency it has been evident that speeded-up production could not wait three or four years until all-around journeymen could be trained. Where machinists could not be obtained, for example, jobs had to be broken down so that they could be performed by lathe operators, milling machine operators, drill press operators, etc. Indeed some jobs had to be broken down still further so that the shortest possible time elapsed before a trainee was producing at top capacity. Similarly, the bottom of the barrel was reached where mechanics were concerned. No more were available. To meet the situation, jobs had to be simplified. When a man could not be given all-around training, he could be given sufficient to make him capable of replacing a carburetor, or checking ignition or welding a part; or repairing bodies. This could be done in a few weeks.

It is this kind of work which we are now doing. With the experience which our staff has had, plus an intensive campaign of retraining our own field representatives, we feel that they are competent to advise on various types of training. It may be advisable for the individual field representative to call on other training agencies to assist on some technical phase of a particular program. In such instances, he immediately calls in a representative of the other agency. These other agencies include the training within industry branch of the War Manpower Commission; the federal, state or local departments of vocational education or the N.Y.A.

Heretofore the factor of time in the training of operators, dispatchers, clerical workers, etc., has not been so important. There was nearly always available experienced labor, and when it wasn't available there were enough persons who had, by easy stages, been



About the Author

MR. STAPLETON, a construction engineer, was, for a number of years, a partner in a contracting firm with offices in Altoona, Pa. During this time he was responsible for the building of the famous Altoona Automobile Race Track. At an early date he became familiar with the problems confronting both the truck and motor bus industries, in fact, operated a fleet of trucks over a period of years in connection with his contract work.

Later he was with the Public Works Administration. The most notable project with which he associated was the Pennsylvania Turnpike, one of the outstanding engineering feats of our time.

In 1940 he joined the Apprentice and Training Service, at that time under the United States Department of Labor. While with the U. S. Department of Labor, he was loaned to the Office of Defense Transportation to assist in developing training techniques and programs for the transportation industry on a national basis.

Mr. Stapleton has recently returned to the Apprentice and Training Service, War Manpower Commission and has been devoting his time wholly to problems confronting the transportation industry. His activities for the most part are confined to the Eastern states.

learning the various jobs and who could be moved up. Now we are confronted with the problem of teaching entirely green people to do jobs that they never thought of doing before. The "breaking in" period must be shortened to the bare minimum.

We believe that this can be done without serious risk to the trainees themselves, to the passengers who ride the buses, and without endangering precious equipment which is now all but irreplaceable. To do so, however, requires a systematic, planned program which deliberately eliminates lost motion. I have been surprised to find, not only in the bus industry, but in most industries, that in breaking in people for jobs there has been no definite training program. No specific time is allotted for training, and no definitely understood idea of the content of the training is existent. It is something like asking a person to describe an accordion. In nine cases out of ten the person questioned will instinctively raise his arms and start going through the motions of playing an accordion. But that isn't a description of an accordion!

At any rate, our experience has shown that the quickest way to get the job done is to find out first what the job is—to blueprint it in other words. Once that is done then we can figure out the quickest, most practical and most efficient method of doing it. Here is where I believe our staff can be of greatest help to your industry.

Our field representatives will be able to advise with you on the possibility of getting workers from other industries; or on the use of older workers, not subject to the draft; or the employment of handicapped and retired workers, and workers belonging to minority groups; and the employment of women—who will represent one of the principal sources of labor supply from now on. In obtaining such workers the help of the United States Employment Service can be of great assistance.

The employment and training of women is probably the major alternative in the situation. Because of the importance of using women in the bus industry, and because of the special factors involved, our next article will deal in detail with this subject.

From what I have said—and the statement is almost obvious—the principal answer to the problem of shortage of manpower in the industry is training, training and more training. I have found that many companies are well on the way in this respect; others, where the situation is not quite so desperate may well give the matter of training a lot of thought.

Since the articles which I have been invited to write by BUS TRANSPORTATION will extend over several issues, I trust that owners in need of training services will not wait until all the articles have been published to request help from our field staff. A letter to the editor, or a communication to me, or to one of the field offices listed, will bring prompt reply. In so far as we are able, we will provide assistance, information and advice.

A number of state and local associations have already asked us to provide information for reproduction in their bulletins. As a result, in these states, there have been state-wide programs set up, designed to facilitate the establishment of training programs. This does not mean that our services are limited to organizational groups. Whether it is a state association or an individual company, our field men are at your service.

(This is the first of a series of articles by Mr. Stapleton. The second will appear next month.)

Locations of Offices Apprentice and Training Service

WILLIAM F. PATTERSON,
Chief Apprentice and Training Service War Manpower Commission
Social Security Building, Washington, D. C.

FIELD OFFICES

Region I

Boston, Mass.	Regional Office—Rm. 1034 Old South Building
Bridgeport, Conn.	Room 310, Post Office Building
Hartford, Conn.	U. S. Employment Service 122 Washington Street
Manchester, N. H.	Room 715, Amoskeag Bank Building 875 Elm Street
New Haven, Conn.	The Labor Temple 139 Goffe Street
East Providence, R. I.	Post Office Building
Springfield, Mass.	415 Stearns Building 293 Bridge Street

Region II

New York, N. Y.	Regional Office—616/7 Old New York State Bldg., 124 East 28th Street
Albany, N. Y.	917 State Office Building
Buffalo, N. Y.	201 State Office Building Franklin and Court Streets
Rochester, N. Y.	Room 201, 70 Exchange St.

Region III

Harrisburg, Pa.	Regional Office—601 Feller Building Third and Market Streets
Erie, Pa.	% W.P.B. 715 Erie Trust Building
Newark, N. J.	928-930 Essex Building
Philadelphia, Pa.	1511 Mitten Bldg., Broad and Locust Street
Pittsburgh, Pa.	1805 Arrott Building Fourth Ave. & Wood Street
Reading, Pa.	U. S. Employment Service Front & Penn Streets
Scranton, Pa.	City Hall
Wilkes-Barre, Pa.	Court House

Region IV

Washington, D. C.	Regional Office—Room 401 1025 Vermont Avenue, N. W.
Baltimore, Md.	Room 62, Iglehart Building Fayette St. & St. Paul Place
Charleston, W. Va.	311 Federal Bldg., Capitol St. 814 Kanawha Boulevard
Durham, N. C.	Post Office Box 2169
Norfolk, Va.	% Va. St. Employment Service 115 Tazewell Street

Region V

Cleveland, Ohio	Regional Office—660 Union Commerce Building
Cincinnati, Ohio	1307 Traction Building 432 Walnut Street
Columbus, Ohio	418 New Federal Building
Dayton, Ohio	23 North Sears Street
Detroit, Michigan	717 Boulevard Building Woodward at Grand Blvd.
Louisville, Ky.	% Kentucky State Employment Service 620 South Fifth Street
Toledo, Ohio	Board of Education 121 Southard Street

Region VI

Chicago, Illinois	Regional Office—1212 Merchandise Mart
Indianapolis, Indiana	Room 804, 108 E. Washington Street
Madison, Wisconsin	% Industrial Commission 1 West Wilson Street
Milwaukee, Wisconsin	% Industrial Commission 623 North Second Street
Rockford, Illinois	227 North Wyman Street
Springfield, Illinois	326 Post Office Building

Region VII

Atlanta, Georgia	Regional Office—304 Lullwater Building
Birmingham, Alabama	324 Phoenix Building
Jacksonville, Florida	% Florida St. Employment Service 10 East Bay Street
West Palm Beach, Fla.	439 Datura Street

Region VIII

St. Paul, Minnesota	Regional Office—Ashton Building 1547 University Avenue
Davenport, Iowa	U. S. Employment Service, Union Bank Building
Des Moines, Iowa	310-11 Masonic Temple 1011 Locust Street

Region IX

Kansas City, Mo.	Regional Office—414 Dierks Building
Tulsa, Okla.	908 S. Cincinnati Avenue
Wichita, Kansas	U. S. Employment Service 1525 East Douglas Avenue
St. Louis, Mo.	404 Chouteau Building 4030 Chouteau Avenue

Region X

Dallas, Texas	6th Floor, Mercantile National Bank Building
Houston, Texas	701-B Federal Office Building Fannin and Franklin Streets
New Orleans, La.	127 Elk Place State Employment Service
San Antonio, Texas	Technical High School
Port Arthur, Texas	4140 Proctor
Austin, Texas	709 Tribune Building
Albuquerque, N. M.	Room 12, City Hall

Region XI

Denver, Colo.	614 Insurance Exchange Bldg. 810 Fourteenth Street
Salt Lake City, Utah.	207 Boston Building

Region XII

San Francisco, Calif.	Regional Office—807 Western Furniture Merchandise Mart, 1355 Market Street
Phoenix, Arizona	% State Employment Service 210 West Jefferson Street
Los Angeles, Calif.	617 H. W. Hellman Building 354 South Spring Street
Portland, Oregon	208 U. S. Court House, Old 520 S. W. Morrison Street
Seattle, Washington	417 Old Times Building Fifth and Olive Way

TRAINING...
Key to the Skilled Help Shortage

LABOR RELATIONS IN TRAINING

By C. Warren Stapleton,
Transport Training Specialist
Apprentice and Training Service
War Manpower Commission

Labor relations is sometimes looked upon by many persons as a kind of continuous tug-of-war between management and labor--sometimes being more or less gentlemanly in its practices, and at other times getting slightly rough. In my opinion, in speaking of labor relations, it is just as well not to speak of "labor relations" at all, but to talk about human relations, for in the final analysis all labor relations problems are individual human problems, approached on a wholesale basis.

People being what they are: anytime an incident, a development, or a proposal challenges what they consider to be their interests, their rights or their privileges, you have a human relations problem on your hands.

Human relations problems--whether they be trivial or important--are always present. They are inclined to be more noticeable, however, whenever there is a change in the status quo. A person might go on year after year, for example, without change in salary, but let someone else be employed to do the same work but at a higher salary, and a labor relations problem exists as instantly as the room gets dark when the light is extinguished. It is the old Biblical story of the laborers in the vineyard all over again. The fellow who labors all day expects to get more than

the latecomer who worked only from the eleventh hour. I have often thought that I should have hated to have the job of labor relations director for their employer!

Putting into effect training programs always involves labor relations problems, or, as I prefer to say here, human relations problems. Incidentally, operators of bus lines certainly should have extensive experience in labor relations problems. What kind of queer quirk is there in the human brain, for example, which almost always prompts passengers getting on a bus to stand in the front part of the bus, while other passengers stumble all over their feet, rather than move to the rear where there are w ide open spaces! In establishing a training program, it frequently appears that similar quirks have to be overcome before the training can actually get under way, or at least before it has begun to succeed.

It is of vital importance that, even while a training program is being planned, labor relations problems be anticipated insofar as possible.

In my last article I mentioned a specific case in which a strike was actually called against a bus company handling thousands of defense workers because of the fact that the male operators feared the employment of women operators would interfere with their seniority rights. This is not at all an isolated case.

I recall another case where a serious labor dispute was developing. At the request of the Army, our field representative went in to make a time study of certain machines in the plant, the operators of which were discontented and were therefore protesting. The field representative found that the company was purchasing a considerable number of automatic-type machines. He found, when operators were transferred from the old type of

machines to the automatics, that because they were working on piece rate basis their hourly earnings increased from about 90¢ to around $1.60. The company would then run a time study to find out the standard number of units per hour on which to base the wage rate. Naturally the number of units which could be produced in the same time was much higher on the automatics. Let us say on the old type machines, a man could produce 20 units per hour while on the new machines the company found that 30 units could be produced without difficulty. When this was discovered, the piece rate was adjusted downward so that a man made approximately what he had made on the old type machine. Disgruntlement followed. Our field representative found that the operator could make the 30 units without difficulty, so the question was not essentially a time study problem.

The field representative's solution was quite simple. After he had talked personally to the various operators, to the union officials and to management, he recommended: When a man is transferred from an old type machine to an automatic, he is immediately placed on an hourly rate basis. After the time study is run and the standard number of units per hour established, the piece work rate is adjusted so that a man gets a slight increase in wages. In this particular case, everybody appeared happy at the solution, and our field representative is now considered in that plant an industrial relations genius!

Labor relations problems, then, do not always involve formal labor organizations. The question of whether or not labor organizations are desirable is not pertinent to this article. Where companies do have agreements with labor organizations, it seems to me that management and labor can work together to achieve common ends, to wit, a more effective

wartime transportation system. Too many times this relationship is a negative one in that each side is concerned only with what "they can get out of the other side." Where common sense rules, and where there is a mutual if perhaps guarded respect, the labor organization can be used to solve heretofore "unsolvable situations."

I have a case in mind with which I was confronted not so long ago, and which illustrates the effectiveness of good labor relations. In proposing a training program for the management of a bus company in a fairly large city in the East, I was told by the president of the company that if the management of several large plants in the city could be persuaded to stagger working hours, the operators and equipment of the bus company could be much better utilized. The fact is that the number of new persons which it was proposed to train could be reduced by one-half if some arrangement for staggering hours could be agreed upon.

The managements of the various plants, when I contacted them, agreed quite readily to the proposal. They mentioned, however, that it had been presented to their workers before, and that they had always turned it down. The reasons given by the workers were that changing the working hours would upset the plans of themselves and their families: children had to be gotten to school at a certain time, and the workers had to be at work at a certain time. The proposed change in hours would require heavier work for the mothers at home. With the cooperation of the Chairman of the O.D.T. joint committee, we consulted with the business representatives of the unions of the various plants. They stated flatly that their membership was opposed to the idea of staggering hours, and they doubted that they could change the attitude of the membership. When

the membership of the various unions was informed however, that their willingness to accept the idea would mean that bus equipment could be better maintained, with consequent less hazard to the workers and to their families; that much more comfortable and convenient service would result for themselves and their families; and that it was a patriotic contribution to the war effort to go along with the idea, even though it would dislocate some of their living routines, all the workers agreed to the plan.

The management of the bus company later reported that since the "staggering" plan was put into effect there has been a 100% increase in the utilization of its personnel and equipment.

As a result, the company is now proceeding with its training program, knowing that the personnel to be trained will be held to the bare minimum.

Where management and organized labor have a working agreement, a joint committee of the two groups is most effective in solving beforehand labor relations problems which may arise in connection with the installation of training programs. The Apprentice and Training Service, from its beginning in 1934, has made most effective use of such joint committees. Frequently we have found that, while both groups in a particular situation may see the need for apprentice, or other types of training, one group may be inclined to be skeptical of the other. As the Director of our Agency, William F. Patterson, has said on many occasions, we have no record of any instance where a joint apprenticeship committee was established that it failed to agree amicably on the various provisions and conditions of the training program. Furthermore, decisions made are in nearly all cases unanimous and many of them are enthusiastic.

In instance after instance, we have found that the experience in joint labor-management cooperation and collaboration obtained in dealing with the apprenticeship problem was extended to other joint problems with unusual results. In one southern state, for example, meetings of a joint state apprenticeship council had the effect of so enhancing the understanding between members that the whole attitude of management toward labor and labor toward management in the state has been improved with consequent benefits to both sides.

One of the outstanding examples of labor-management cooperation in the transportation field through a joint committee exists in one of the largest metropolitan cities in the country. Both as to volume of business and amount of equipment, operations in this city are tremendous. Up until the year 1937, frequent and, I'm afraid, serious controversy existed between the employer and the labor groups. In that year a joint committee covering not only the city area, but a large part of a great industrial state was set up. As a result of a determined effort on both sides to understand the point of view of the other side; and as a result of persistent pressure by the officials of the management association and the labor organization on their respective groups, machinery was established for dealing with possible disputes. Part of this machinery was a joint committee. It is interesting in connection with the machinery that was set up, that the respective heads of the groups act as co-chairman in all meetings. Because of the fact that the committee has met regularly, it is nearly always possible to discuss misunderstandings in their incipient stage. This is not to say that there have not been vigorous differences of opinion,

but these have always been compromised to the substantial satisfaction of both parties.

This joint committee has established a remarkable record: In all the time of its operation there has not been a work stoppage among the transportation companies represented in the joint committee, locally or in the over-the-road field.

It is hardly to be wondered that we look with so much favor on the idea of the joint labor management committee. We recommend the idea to the consideration of bus associations and individual operators, especially those who are confronted with the continuous and sometimes vexing situations which confront management as an outgrowth of the present emergency situation. Whether the operators see fit to adopt the idea as a policy, is for them to decide. But at any rate I believe it is worth their attention and study.

There has been some misunderstanding regarding the authority of such committees. It ought to be stated categorically therefore that the kind of committee we recommend does not and should not attempt to assume prerogatives which belong to management exclusively. It is suggested that in problems falling in that area which are common to both groups--discussion of seniority plans, wage formulae, dilution of jobs, etc.--the most satisfactory results can be obtained by having both groups tackle the problems together.

Under the stimulus of the Office of Defense Transportation, joint management committees have been set up in many cities for the purpose of tackling the problems confronting the motor truck industry in those cities.

I can say, from personal observation, and contact with these committees, that they are not just window dressing; they are actually working. I do not mean to imply that setting up of such committees causes immediate removal of all difficulties between them--quite the contrary; but, such committees, whether they are on a city-wide or a state-wide basis, bring joint problems into focus. They discover very quickly, as happened in a state from which I have just returned, the difficulties which were preventing cooperation, and thus enable the committee, with the help of members of our field staff, to resolve them. Strangely enough we have found that these difficulties are due oftentimes to causes about which the other group may not have even had any knowledge. In the state to which I have referred we found that the labor groups were not putting their full force behind the training programs because they misunderstood the intent of management in proposing them. Once the situation was explained to them in detail, however, and their own interest in training shown, setting up of training programs proceeded rapidly, the labor organizations indicating that they would cooperate fully both on the state and local levels.

I do not want to give the impression that there is any simple panacea for all difficulties between management and labor; there is not. It may be necessary in the case of the bus industry to call for the services of such agencies as the Office of Defense Transportation or the United States Conciliation Service to solve some disagreements. Where this is necessary our field representatives are available to indicate the functions of these other agencies and to explain how these services can be utilized to the fullest measure. While our field representatives are instructed to act in this liaison capacity, especially where training programs are involved, we are always hopeful that disagreements will not reach the

stage of seriousness where the agencies mentioned have to be called in. It is in this respect that the joint committee can be of most use to industry--in being able to understand those points on which labor may be sensitive or on which management may be sensitive--in being able, in other words, to interpret for one group the attitude of the other, remaining themselves impartial--as government representatives should be.

In one large city the labor-management committee for the trucking industry has decided to invite the cooperation of employers and employees in all types of transportation in the area. This would include not only freight carriers but buses and street railways as well. Whether or not this idea is generally accepted by the bus industry, I mention it here as a possible method of obtaining common clearance regarding recruiting, utilization of manpower, etc., all of which are involved in developing a training program. As a suggestion, bus companies could either participate in the operation of the general transportation committees referred to above; or, if they see fit, they could arrange their own joint committees. There need not be a lot of red tape to forming them. It is simply a matter of the respective groups selecting a small number of persons to meet at regular intervals to discuss common problems. They could be set up to take care of the training problem alone or to deal with all common problems, including training.

Whether or not the bus industry is to keep ahead of the increasing demand of the Armed Forces for manpower will depend upon its ability to train persons to replace those taken by the Armed Forces. The training therefore is not only advisable but--and I cannot emphasize this too

strongly--inevitable and indispensable. Obviously, the setting up of training programs requires a technical knowledge, but this knowledge and the effort used in bringing it to bear on the particular situation, will be very largely wasted if labor relations difficulties prevent training programs from being put into operation, or put into operation ineffectively.

You may have the finest training program in the world, but if your supervisors, your mechanics, your operators, your inspectors, and other present personnel do not understand what you are trying to do and why you are trying to do it, the chances are that the trainees will not obtain the information necessary to carry on the jobs to which they are to be assigned. It is not enough that they merely know why a training program is set up. Their personal and job interests should be shown and great pains should be taken to assure them that their security and interests are safeguarded insofar as it is possible to safeguard them.

I have cited only a few of the possible instances where human relations play an important part. I could mention scores of others, but there is not space here to set them all down. If I have made the point, however, that it is wise business foresight to consider carefully the human elements involved in setting up training programs, the purpose of this article will have been accomplished.

To: Miss Stitt

From: Mary Curran

Apprentice-Training Service
War Manpower Commission
1778 Pennsylvania Ave.

TRAINING - ANSWER TO THE MANPOWER SHORTAGE

Selection and Training of Women

By C. W. Stapleton,
Transportation Specialist
Apprentice and Training Service
War Manpower Commission

In some localities the traffic load on buses has stepped up as much as 150%. Though the rate of increase may not be as great in all places, it is obvious that everywhere it has been tremendous.

In my first article in this series I referred to the reasons for the staggering rise in the number of persons using bus transportation. It is not necessary to go into them again. Operators are all too familiar, not only with the fact of the rise, but also with the reasons for it, and all indications are that buses will have to carry an even greater number.

Some practical methods for meeting the many problems connected with the flood of additional traffic were given: use of truck drivers; conversion of delivery-truck operators; utilization of over age and handicapped persons and representatives of minority groups, heretofore not employed; and the employment of women--by far the largest group of persons available.

How successful is the idea of employing women in the bus industry? What jobs can they handle? What special problems does their employment present? What special arrangements are called for when they are employed? And how are they to be trained?

A statement released recently by Mr. Paul V. McNutt, Chairman of the War Manpower Commission, stated that after March 15 of this year, married men below the age of 38, engaged in certain non-deferable industries or jobs, will be drafted, even though they have dependent children. This is a plain indication of how stringent the labor supply problem will become.

Employing women, therefore, becomes not merely a probability, but a downright necessity.

Until recently there has been a natural tendency to think of women doing only the lighest kind of work. The time has come, however, to think way beyond that point. As the labor supply situation becomes more and more acute, it will become necessary to put women not only on jobs such as ticket sellers, traffic checkers, inside cleaners and operators of light equipment, but also on such jobs as specialist-mechanics, outside cleaners and operators of heavy equipment. The fact is, that in a number of localities women are already doing all these jobs.

Labor Relations Problems

One of the first problems which arises in employing women is that of the effect on the rest of the working personnel.

An illustration will show the kind of difficulty I have in mind. In a fairly large town which has three large defense plants, I succeeded in getting the management of the local transportation company to employ women bus drivers. The situation here was particularly crucial because the three plants were on the outskirts of the city. Thirty women were selected as drivers and training began. For the time being it was decided that women would be used only on the day runs. Opposition immediately developed on the part of the men who were making the day runs. It turned out that aside from the fact that the day runs were more desirable, those who had seniority had been given these runs. Before we knew it a strike had been called!

While the negotiations in connection with settling the dispute was pretty warm, the solution was comparatively simple. Having gotten agreement from the management to make the proposal, I suggested that the

idea of seniority determining day runs be set aside; that it be understood that seniority be determined by the length of efficient service; that the night operators receive a slightly higher rate, for waiving their priority on the best runs. When the men were assured that their seniority was protected, and an appeal was made to them that it was a patriotic duty to cooperate in getting the buses manned, the dispute ended.

In cases involving a revision in wage rates, prior approval must be obtained from the War Labor Board. Information on how this approval can be obtained is available at the nearest office of the Wage and Hour Division of the U. S. Department of Labor.

Special Facilities For Women Employees

The employment of women drivers requires, of course, that separate toilet and rest room facilities be set up. Some companies have gone further and established separate club rooms for recreation and relaxation between runs. It is my belief that the extra expense involved in providing those facilities will be more than repaid in improved morale and in maintenance of better standards of physical fitness. This belief is borne out by statements of owners who have provided the additional facilities.

While the use of women on night runs is at present uncommon, it is my prediction that before we are through it will be quite common. One company which has placed women on a night run serving a late shift at a shipyard, is putting the drivers through what it calls a "Commando" course. A professional trainer has been employed to give the women lessons in jiu jitsu, and other methods of self-defense, and special instructions are given regarding what to do in case it is necessary to handle obstreperous

passengers. While this idea is to a larger extent, psychological, with the intention of giving the women self confidence, it is at the same time a practical precaution.

State Laws Concerning Women

Provision for rest periods is provided by most companies at the present time. In some states there are laws making rest and lunch periods compulsory. Other provisions affect total number of hours per week, and total number of permissible hours to be worked in certain given "spreads"; maximum weight to be lifted by women, etc. These regulations were established with particular reference to manufacturing plants. Because employment of women in transportation industries was not envisioned at the time the regulations were adopted, there is some confusion as to their application in the bus industry.

In some States, Labor Commissioners are granting temporary exemptions under emergency clauses in the laws and regulations relating to the employment of women over 18. Because of the variations of these laws from state to state, operators should determine from the State Department of Labor, under what conditions women can be employed legally under the laws of the State in which they are operating. In this connection, it is my intention to discuss these laws in detail in a separate article.

Recruiting

In some localities, recruiting of women for work with the bus companies may be comparatively simple. Requisition of applicants from the local U. S. Employment Service, working under the War Manpower Commission, is the most satisfactory way to bring applicants in sufficient numbers.

There are still areas where the labor situation, especially with regard to women, is relatively "easy." In other areas, demand for women

workers in war plants has made the labor market tight. Accordingly it may be necessary to use further stimulus to obtain acceptable applicants. Whatever procurement devices are used, it would be well to emphasize that prior experience, other than--in the case of operators--the ability to drive a car is unnecessary.

The recruiting drive will be affected by such things as: good wages; pleasant rest rooms; and fair and agreeable supervisors. An effective device is the provision of attractive and practical uniforms.

Cooperation of various civic, fraternal or social organizations may be needed to publicize the need for women workers, all of which should be worked out with the United States Employment Service.

Selection

The entire success of the plan of using women will depend on the care with which they are selected. The interviewer should be given specific instruction regarding the type of woman most likely to succeed at the work.

Obviously selectees should be old enough to have common sense, judgement and self-confidence. Probably the ideal age range is between 25 and 35, although it has been found that women below this range and above it have proven satisfactory.

In the beginning some companies have used only married women, preferably those whose husbands were already employed by the company.

I do not see that this makes much difference except that the extent of their home responsibilities should be considered since this is a strong determining factor in their being on the job every day. A full explanation should be made to applicants of the work requirements and conditions before hiring.

Selectees should be robust and strong enough to do the job for which they are intended. In addition to physical fitness, ordinarily 125 pounds is considered the minimum for the more strenuous jobs. This minimum may not be required for clerical workers, checkers, etc.

It has been found advisable to have a woman consultant either connected with the Personnel Office or as a supervisor for the group of women employed. In an interview before hiring, this consultant would be better able to discover whether there are any physical disabilities which would contribute to absenteeism.

A very important item in selection concerns the personality and temperament of the applicant. Women who have had experience in dealing with the public are to be preferred. Nervous, irritable, sullen or flighty persons, on the other hand are hardly good prospects for operators.

Training

The actual training of women for jobs in the bus industry will not vary greatly from that given male employees. I cannot emphasize too much, however, that before training starts, preparatory steps should be carefully mapped out and followed. Foresight in determining which jobs can be handled by women; anticipating legal and labor relations problems; precise selection of applicants to be sure of physical or mental adaptability; these will pay dividends. By fine-tooth combing the applicants on these points, turnover will be kept to a minimum, and a fully trained staff is more likely to be maintained. Otherwise there will be greatly increased costs, and the lack of smoothness in operation which accompanies continual breaking-in of new employees. ***

*** - Field Representatives of the Apprentice and Training Service, list of whichwas published in the February issue of Bus Transportation, will be able to assist you in working out the over all training program.

Much time and effort will be saved by reducing training plans to writing. In the first place, the instructor should be carefully instructed in how to instruct others. The most experienced operator or mechanic is not necessarily a good teacher. Fact is that frequently a poor mechanic may be a good instructor, and vice versa. The expert mechanic or operator may know his job so well that he is inclined to take for granted that the newcomer understands things with which he may be entirely unfamiliar. A definite "teacher training" program, especially where there are larger numbers involved, will save a lot of headaches.

In the case of persons employed in the shops on mechanical work, a definite schedule of instruction is called for. It is not expected, of course, that even the best training program can produce all round mechanics. There is not time to train them in the first place, and in the second place, few of the women now employed in the shops, or as operators will be employed in these jobs after the war. Some companies, in fact, are inserting in their application forms a statement to the effect that employment will be terminated upon the expiration of the war period.

The secret, of course, in getting women trained for mechanical work is to break the various jobs down into the more simple operations. Where it would be impossible in the time at hand, to train all round mechanics, it is possible to train them as ignition specialists, carburetor repairers, radiator specialists, etc. Now is this merely theory--it is already being done.

Several such schedules as those mentioned above have been prepared by our agency, and are available for distribution. Others are in course of preparation. These various types of training programs will be discussed in

a later article. In the meantime, if there are immediate problems in connection with the training of your personnel, I suggest that you get in touch with me; with one of the field offices of our agency; or with the Editor of "Bus Transportation."

In order to make these articles as timely as possible, and to enable our field staff to provide practial help, it is requested that operators give us the benefit of their experience by forwarding descriptions of their training programs; information regarding special problems, and the manner in which they were handled; and any comments or remarks which it is believed will be useful in helping other companies in whipping their labor shortage situation.

Extracts from letter regarding
Women in Railroad Jobs

Baltimore and Ohio Railroad Company
Baltimore and Ohio Magazine
Baltimore 1, Maryland

July 26, 1943.

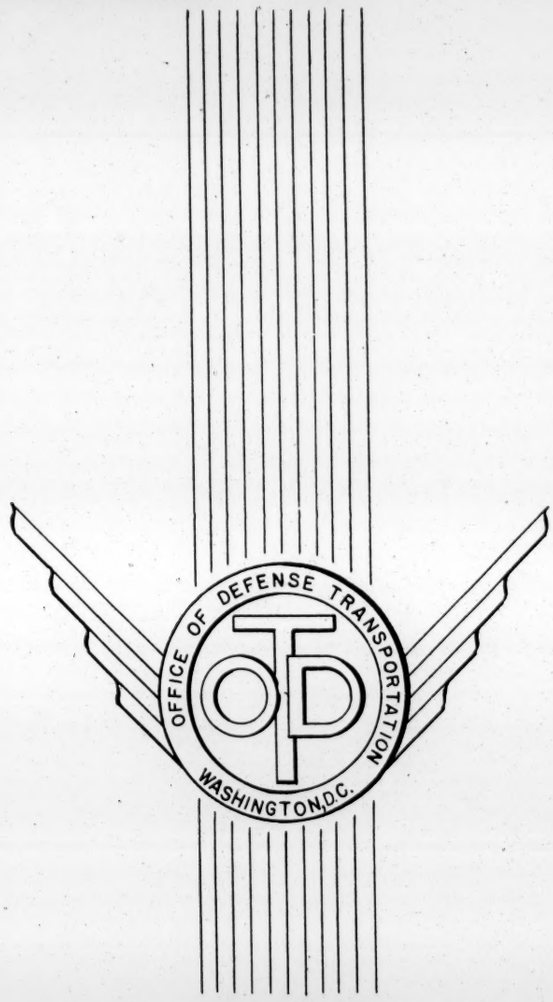
.....B & O women are at work as crossing keepers, shop employees, section hands, B & O policewomen, etc.

You may be interested to know that there was referred to me recently, a complaint from a western railroad, to the effect that women were not making good on the tracks. Asked if I wished to make a statement in rebuttal, I immediately interviewed B & O Maintenance of-Way officers, who took the opposite viewpoint, saying that if a women's section gang did not make good it had been their experience invariably to find that the fault lay in the supervision. The western railroad man said his railroad was so restricted by laws in the matter of weight lifting, working hours, etc., that they were not able to get much good out of the women track hands.

Our Mr. Petri, chief engineer of maintenance, said that although in various states through which our lines run there are certain laws governing these points, that regardless of laws there are certain phases of track work which he would never assign to a woman. There are still a sufficient number of men left to jack up the tracks and to lift heavy crossties. Men hate to pick up papers, pull weeds and grass; women on the other hand do not mind it, they like to see the result of their labor, and in keeping our tracks clear they do a finer job than men ever did.

Concerning working hours, Mr. Petri does not advise keeping women on the tracks more than 8 hours. To do so may unfit them for the job on the following day. Most of our women-power for track work is drawn from the homes. The majority of these women have families; many have children. There is plenty of necessary home work that these mothers mustdo after the eight hours of track work. To keep them on the job longer would also tend to increase absenteeism. . . . . .

SURVEY OF WORK SUITABLE FOR WOMEN ON RAILROAD "A"



JANUARY, 1944
PERSONNEL SUPPLY SECTION
DIVISION OF TRANSPORT PERSONNEL
OFFICE OF DEFENSE TRANSPORTATION

5-20 27-C

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PREFACE

Last September the Office of Defense Transportation issued a document entitled "The Railroad Manpower Situation." This Document contained an action program designed to prevent the develcpment of manpower shortages on the railroads. Included in this program was a provision which reads as follows:

"3. Recruit and enlist services of women employees to the fullest extent possible.

"Railroad management must initiate and promote this part of the program. Individual railroads have of course already done so. The first step in the program would be for each railroad to list all jobs which in the judgment of its management can be filled by women, and then determine how many women by job classification will be required to fill these jobs. Assistance in the recruiting can be obtained from the Office of Defense Transportation, the War Manpower Commission, and the Railroad Retirement Board.

"Some railroad companies, notably the Pennsylvania and the Southern Pacific, have done relatively much more than others in recruiting women employees. Not even the few companies that have been aggressive in this matter have by any means exhausted the possibilities. Railroad labor organizations have both helped and hindered. They have had no uniform policy. They should help consistently by agreeing, for the duration, to the modification of the seniority provisions of their labor agreements which militate against the employment of women."

With a view to helping the railroads, the railroad labor organizations, the Railroad Retirement Board, and the War Manpower Commission to carry out this provision of the Office of Defense Transportation Railroad Manpower Program, a study of railroad work which women can do has been undertaken by Miss Dorothy Sells, Chief, Personnel Supply Section, Division of Transport Personnel, and Miss Clive Dennis, Engineer of Service, Baltimore and Chic Railroad, who acted as consultant and co-worker with Miss Sells during the period of the study. This study constitutes an on-the-spot analysis of the work performed on one division, and in one large shop and store house of a typical Western Railroad.

Since last September, when the replacement of men by women in railroad occupations was urged by the Office of Defense Transportation, the need for such replacements has become progressively acute. The women of the nation constitute the largest single source of labor supply still available for transportation occupations. Both in England and here at home women have proved themselves capable in a great variety of railroad jobs for which they were not considered suitable before this war. Though a good beginning has been made by the utilization of over 100,000 women in nearly 90 of the 128 occupational groups for which the Interstate Commerce Commission obtains

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regular employment reports, places for many more will have to be found if imminent manpower crises in many localities and at various points on the railroads are to be averted.

Among the thirty-two railroads in the United States employing more than 10,000 persons each, there is not only a wide diversity in the types of work where it has been found feasible to use women and in the numbers of women employed, but the percentage of total employees who are women ranged in October 1943 from 13.3 per cent on the railroad employing the greatest proportion of women to 2.8 per cent at the lower end of the scale.

Circumstances peculiar to each company no doubt account for many differences of this kind, but the facts indicate that uncertainty about what is suitable work for women has been one of the greatest deterrents to more general utilization of the nation's womanpower by the steam railroads.

Both Miss Sells and Miss Dennis have worked conscientiously on this report, having spent considerable time in the field and in consultation both with supervisors and representatives of employees. They have, in my opinion, done a very thorough job so that it is with confidence I commend their joint effort as being worth serious consideration by those concerned with facilitating employment of women on the railroads.

Otto S. Beyer, Director
Division of Transport Personnel

Purpose of the Survey

The purpose of the Survey was to determine by observation and analysis of operations, what specific jobs are suitable for women, what jobs are not suitable for women, and what jobs with reasonable adjustments can be adapted to the limited physical capacities and experience of the average woman worker.

The Survey was conducted during the period September 26 - October 12, 1943.

A Survey of this kind was undertaken at this time because it was believed that it would form a realistic basis for increased utilization of women workers in the railroad industry as a part of the Thirteen Point Manpower Program issued by the Director of the Office of Defense Transportation on September 1, 1943.

Selection of Railroad "A"

Railroad "A" was selected for the Survey for the following reasons:

1. It is a western railroad with a manpower problem, but is not located so far away as to entail a great deal of travel.
2. It employs a relatively small percentage of women.
3. Its main facilities are concentrated within a conveniently small area.
4. Its management and labor representatives were cooperative with regard to the survey.

Scope of the Survey

The Survey included most of the jobs in all except the first of the reporting divisions for which manpower figures are collected by the Interstate Commerce Commission, namely:

I. Executives, officials and staff assistants
II. Professional, clerical and general
III. Maintenance of way and structures
IV. Maintenance of equipment and stores
V. Transportation (other than train, engine and yard).
VI (a). Transportation (yard masters, switch tenders and hostlers).
VI (b). Transportation (train and engine).

Some occupations which are obviously unsuitable for women and a few others which are not performed on Railroad "A" were omitted from the Survey. The work involved in several additional occupations was observed on other railroads, e.g. suburban trainwomen and various occupations performed in a hump yard.

Method of the Survey

The first step in the Survey was to discuss its purpose and plan with the Division Superintendent, Superintendent of Shops, General Storekeeper, the General Chairmen of the Shopcrafts and the Division Chairman of the Clerks with a view to obtaining their cooperation. During the progress of the Survey a letter explaining its purpose and scope, was sent to the following by the Director of the Division of Transport Personnel:

A. Johnston, Grand Chief Engineer, Brotherhood of Locomotive Engineers
D. B. Robertson, President, Brotherhood of Locomotive Firemen & Enginemen
H. W. Fraser, President, Order of Railway Conductors of America
A. F. Whitney, President, Brotherhood of Railroad Trainmen
T. C. Cashen, President, Switchmen's Union of North America
Maurice Franks, President, Railroad Yardmasters of America
Geo. M. Harrison, President, Brotherhood of Railway & Steamship Clerks, Freight Handlers, Express & Station Employees
E. E. Milliman, President, Brotherhood of Maintenance of Way Employees
V. O. Gardner, President, Order of Railroad Telegraphers
A. E. Lyon, President, Railroad Signalmen of America
P. M. Jewell, President, Railway Employes' Department

Throughout the Survey the investigators were accompanied by a member of the Labor Relations Staff of Railroad "A". The different jobs were observed one by one in each department. The foreman (or chief clerk) of the department concerned accompanied the investigators and answered questions regarding the specific duties entailed in each occupation or job. The general chairman of the appropriate labor organizations in some cases accompanied the investigators and the judgment of both supervisors and general chairmen was sought with regard to the suitability of each job for women.

Following the observation trips, the investigators consulted with one another and checked their own judgment as to suitability of each job for women with that of other experienced persons and with available lists of railroad jobs considered suitable for women on other railroads and by other agencies. The decision as to whether a particular piece of work could be done by the right type of woman was finally determined on the basis of the nature of the work and the physical or other limitations of women, irrespective of restrictions embodied in labor agreements or governmental regulations.

The findings of the Survey were submitted to the Presidents of each of the railway labor organizations listed above and to the Association of American Railroads for their comments. All specific points which were raised have been carefully considered and certain changes have been made in revising the original text of this report.

Findings of the Survey

A. DESCRIPTION OF THE WORK IN THE VARIOUS DEPARTMENTS OF RAILROAD "A" AND THE POSITIONS SUITABLE FOR WOMEN IN EACH

In this report the departments are dealt with in the following order:

I. EXECUTIVE OFFICES

II. GENERAL OFFICES
- Engineering
- Employee Records and Insurance
- Labor Relations
- Accounting
- Traffic
  - (a) Passenger, mail, baggage and express
  - (b) Freight
- Purchases and Stores
- Other General Offices
  - (a) Police
  - (b) Medical
  - (c) Legal and Claims
  - (d) Real estate and Taxes
  - (e) Photography
  - (f) Printing
- Clerical and Service

III. MAINTENANCE OF WAY AND STRUCTURES
- Roadway
  - (a) Section work
  - (b) Repair Shop
- Bridges and Buildings
- Telegraph, Telephone and Signals

IV. MAINTENANCE OF EQUIPMENT AND STORES
- Inspection of Locomotives and Cars
- Motive Power
  - (a) Round House
  - (b) Back Shop
    - Erecting Shop
    - Blacksmith Shop
    - Boiler Shop and Tank Shop
    - Electrical Shop
    - Machine Shop and Tool Room
    - Wheel and Truck Shop
    - Rod and Link Shop
    - Tin and Pipe Shop
    - Pattern Shop
    - Power House

Freight Car
(a) Freight Car Yard (rip track)
(b) Freight Car Shop

Passenger Car
(a) Passenger Car Servicing
(b) Passenger Car Yard
(c) Passenger Car Shop
Body and Paint Shop
Electrical Shop
Wheel and Truck Shop
Pipe and Tin Shop
Upholstery, Carpet and Cabinet Shop

Stores
(a) Storehouse and Storeyard
(b) Reclamation and Scrap Dock

V. TRANSPORTATION (OTHER THAN TRAIN, ENGINE AND YARD)
Dispatcher's Office
Telegraph, Telephone and Towers (Interlocking and Crossing)
Stations
(a) Passenger
(b) Freight
Dining Car Service
Laundry

VI (a). TRANSPORTATION (YARD MASTERS, SWITCH TENDERS AND HOSTLERS)

VI (b). TRANSPORTATION (TRAIN AND ENGINE SERVICE)

I. EXECUTIVE OFFICES
Executives, Officials and Staff Assistants

Railroad transportation is a specialized technical field, in which experience acquired in outside industries has only a limited value.

The diversified nature of railroad activities and the interdependence of the various departments also requires for the work of executives and higher supervisory officials, a background of railroad experience not usually possessed by women. For these reasons the positions within this classification which can be filled by women are usually limited to those of executive assistants, dealing more particularly with one specific type of work.

II. GENERAL OFFICES

Professional, Clerical and General Employees

The arrangement of departments varies on different railroads. The following outline agrees in general with the practice on the particular railroad used as a basis for this survey. In the general offices for each department there are clerical positions covering stenographic, secretarial and messenger work, filing, and bookkeeping, which can be handled by women. These will not always be repeated under the individual department headings. This is not a complete list of all departments on all railroads, but it includes the principal ones located in the general offices of railroad "A":

- Engineering
- Employee Records & Insurance
- Labor Relations
- Accounting
- Traffic
  - Passenger, baggage, mail and express
  - Freight
- Purchases & Stores
- Other General Offices
  - Police
  - Medical
  - Legal & Claims
  - Real Estate and Taxes
  - Photography
  - Printing
- Clerical and Service

A detailed study of each of these departments reveals the following facts:

Engineering

This office prepares plans and programs of expenditures for the building and maintaining of railroad facilities, including tracks, bridges and buildings. The principal positions in this department require technical training and experience. Since the training cannot be obtained within a short period and the experience derived from field positions is generally not obtainable, such jobs are not considered suitable for women unless they have already received an engineering education.

There is other work, particularly in the drafting room, however, to which women with adequate technical education are admirably suited.

Work Suitable for Women:

Designer and detailer
Draftsman
Tracer
Letterer (including map coloring)
Record keeper
Blue print machine operator

Employee Records & Insurance

The Employment and Insurance Department handles personal records of all employees, group insurance and pensions. All of the work in this department is clerical in its nature and is exactly the right kind of work for women.

All positions in this department, except that of superintendent, were handled by women on the railroad studied.

Work Suitable for Women:

All positions

Labor Relations

This department handles, with railway labor organizations and government agencies, all personnel matters pertaining to seniority rights, working agreements and rates of pay.

Most of the work of this department seems better suited to men than women, because it requires dealing with labor chairmen, all of whom are men. However, women of the right type often make better conciliators than men; and women might be used in connection with this function if the work can be so organized.

Work Suitable for Women:

All clerical positions

Accounting

The accounting offices deal with freight accounts, overcharge and loss and damage claims, disbursements and pay rolls, passenger accounts and interline ticket rates, car service accounts, fuel accounts, joint facilities accounts, statistics and cost studies.

The machine work for all of these offices can be performed by women on dictaphone, comptometer, and International Business Machines. The mail bureau of the accounting department can also be handled entirely by women. It covers all stencil and hectograph work.

A few of the accounting jobs, such as that of the car repair clerk, require technical knowledge not usually possessed by women. The preparation of interline freight accounts requires much training for the verification of rates and interline divisions. Practically all other work in the accounting offices can be handled by women who are sufficiently trained.

Work Suitable for Women:

Paymaster
Accountant or auditor
Clerk
Mechanical device operator
Waybill sorter

Traffic

(a) Passenger, Mail, Baggage and Express Traffic

This office solicits passenger, mail and express business and is responsible for maintaining standards of service which will attract and hold patronage.

Much of the work covered by this department is suitable for women. The work of passenger rate clerks requires considerable experience but can be handled by women if sufficiently trained. Part though not all, of the passenger traffic representatives contacting the public may be women.

Women can be depot passenger agents, whose duties include stocking trains at terminals with stationery and literature, inspecting the condition and servicing of passenger cars on outgoing trains, assisting passengers in transferring between trains or stations, changing tickets and looking after invalids, old persons and children.

With adequate training women make good ticket sellers, and have been found particularly fitted for small offices in hotels, stores and other city locations.

Women can handle the work of the advertising department, particularly when the general advertising program is planned by a committee of officials and the detailed copy writing is assigned to an outside advertising agency.

Women are not so well suited for jobs as baggagemen because of the necessity for handling heavy bags on trains in a very limited time.

Work Suitable for Women:

Depot passenger agent
Passenger traffic representative
Rate clerk (senior and junior)
Ticket seller
Information clerk
Reservations supervisor
Reservations clerk
Mail distributor (company mail room)
Copy writer (advertising department)

(b) Freight Traffic

The work of the freight traffic department includes soliciting freight business, preparing freight tariffs, quoting rates and handling divisions of revenue. These positions require much training and experience, but can be handled by anyone sufficiently trained whether man or woman.

Since freight traffic representatives contact managers of industries and attend meetings with representatives of other transportation agencies, most of whom are men, this work is probably not as well suited to women as that of the passenger department.

Work Suitable for Women:

Rate clerk (senior and junior)
Tariff clerk (senior and junior)
All other clerks

Purchases and Stores

This office handles supervisory office work for the stores department, including shop orders, and makes all outside purchases of company material and sales of scrap or other material. Fuel and stationery are handled in separate departments similarly organized.

The work involves determining priorities, placing orders in accordance with company standards, tracing and hurrying shipments, checking prices on invoices. Men are probably better suited for the jobs of lumber and fuel buyer and for that of file clerk which requires familiarity with the great diversity of articles to be purchased, many of a technical nature.

Work Suitable for Women:

Assistant priority director
Assistant order clerk
Order writer
Requisition clerk
Invoice clerk
Hurry clerk
Assistant hurry clerk
Assistant purchase invoice clerk
Assistant statement clerk

Other General Offices

(a) Police

The duty of this department is to protect company property, goods and passengers in transit and in stations, and to maintain order on the railroad property.

Work Suitable for Women:

Patrolman (in suitable locations and preferably in daylight hours.)
Watchman (in suitable locations and preferably in daylight hours.)
Guard (in suitable locations and preferably in daylight hours.)
Detective

(b) Medical

This department is responsible for the required periodic medical examinations of employees, for examination and treatment of injured persons and testimony in court when necessary, and also for maintenance and supervision of first aid stations at various points on the railroad.

Work Suitable for Women:

Laboratory assistant
First aid attendant
Nurse

(c) Legal and Claims

The duty of the legal department is to advise company officials on all matters of law and government regulation, to prepare briefs and argue cases in court, and before government tribunals, and to transact all other necessary legal business, including the handling of taxes and claims.

Work Suitable for Women:

Attorney
Legal assistant
Librarian

(d) Real Estate and Taxes

This department represents the railroad in the purchase, sale or leasing of real estate; compiles information regarding land and real estate values for taxation purposes; examines and arranges for adjustments of assessments and other property taxes; and performs other related work.

Work Suitable for Women:

Real estate agent
Tax agent

(e) Photography

Some railroads maintain a department for the making of photographs and prints needed to illustrate reports and for publicity purposes.

Work Suitable for Women:

Photographer
Photographer helper

(f) Printing

The printing of railroad timetables, circulars, letterheads, forms, advertising leaflets, and employee literature may be handled by contract with an outside agency or in a company-owned print shop. In such a shop all jobs except those involving heavy manual labor can be handled by women.

Work Suitable for Women:

Printer
Printer helper

Clerical and Service

Almost every department involves some general clerical and service work. In some cases this is done within the department and in others by special bureaus.

Work Suitable for Women:

Claim agent and investigator
Clerk (general)
Secretary, Stenographer and Typist
Mechanical device operator
Storekeeper and tool room attendant
Telephone switchboard operator (PBX)
Elevator operator
Motor vehicle operator
Matron
Messenger
Janitor, cleaner, sweeper

III. MAINTENANCE OF WAY AND STRUCTURES

As indicated by the name, the duty of this department is to maintain the railroad track, right of way, bridges and buildings in good working condition.

Roadway

(a) Section Work

Heavy track work, involving renewals of ties and rails, is done by extra section gangs, usually housed in camp cars and moved from one site to another as the work progresses. Because of these housing conditions and the weight of the material handled, women cannot be used efficiently for heavy track work.

The lighter track work is performed by regular section gangs, assigned to definite sections of track. Women can be used for much of this lighter track work, particularly in localities where they can return home at night. They can handle practically all the track work required in freight yards and on side tracks and on main lines can be used in mixed gangs to assist in dressing track.

Work Suitable for Women:

Section man
- cleaning trash from right of way
- destroying weeds and grass
- cleaning debris from ditches and culverts
- levelling eroded spots in slopes
- cleaning and oiling frogs and switches
- de-icing switches
- removing snow
- tightening track bolts and spikes
- cleaning and filling oil switch lamps
- cleaning lenses of electric lamps
- cleaning and edging ballast
- packing ballast
- levelling piles of dirt thrown up by a mole

Section flagman

(b) Repair Shop

The Maintenance of Way Repair Shop is occupied chiefly with the work of reclaiming rail, frogs and switches. Used rails are straightened in a hydraulic press, the battered ends cut off and new holes drilled for the attachment of angle bars. In much of this work women can be of assistance.

Work Suitable for Women:

Welder (acetylene)
- building up frogs and welding composite angle bars for different sizes of rail

Machinist or helper (depending upon the terms of the agreement)
- operating hydraulic rail press
- operating power roller (forcing rail into cutter)
- operating radiograph
  - cropping ends of rail with semi-automatic oxyacetylene torch machine
- operating twin chuck horizontal drill
  - drilling holes in cropped rail (if power roller is used)

finishing rail ends (smoothing cropped ends of rail using portable pneumatic grinder, preferably suspended by a spring)

Laborer
measuring, marking center, recording and sorting reclaimed rail according to length

Bridges and Buildings

Bridge and building gangs install, repair and alter structures along the railroad lines as instructed by the company's engineers. Women, as helpers of skilled trades workers, can assist in much of this work.

Work Suitable for Women (if they can return home at night):

Painter
scraping and painting bridges or buildings
Sign painter (signs, signposts, crossing gates, etc.)
Painter helper
Carpenter helper
Iron worker helper
heating rivets
Plumber helper
Electrician helper
Laborer
working in concrete and cement

Telegraph, Telephone and Signals

The duties of this department are to construct and maintain automatic block signals, interlocking plants, and the equipment of telegraph and telephone systems.

The work of installing telephone, telegraph and signal equipment out on the line does not seem suitable for women. In the repair shops, however, where company telephones, clocks and relay instruments are repaired women can be used in a number of occupations.

Work Suitable for Women:

Signal maintainer helper
dismantling, cleaning, adjusting and reassembling signals and telegraph relays

soldering
coil winding
filling transformer boxes with asphalt

Telephone repairman helper
dismantling and reassembling company telephones
varnishing and enamelling metal parts
rewiring to diagrams
packing and unpacking shipments

Clock repairman helper

IV. MAINTENANCE OF EQUIPMENT AND STORES

Inspection of Locomotives and Cars

Locomotives are inspected in the round house after every run. Freight cars are inspected for defects at interchange tracks, at receiving and classification yards, at industry yards, and at forwarding or departure yards. All of this work is technical and requires much experience.

As freight trains pull into the receiving yards before classification, inspectors in pairs, one on each side of the train, watch the cars as they roll by and listen for the pounding of flat wheels or rattling of loose parts. After the train has stopped, a thorough inspection is made beneath and above the cars to check the wheels, journal boxes and lubrication, the running gear, the draft gear, the brake rigging and hand brakes, the air brakes, the coupling, the grab-irons or handholds on sides, ends and top. In a hump yard, the wheels and journal boxes are inspected and oil added where needed as the train moves slowly up to the hump. The inspection of parts beneath the cars is made from a pit between the rails. Inspection work of the first kind does not seem suitable for women because it involves climbing on and under cars. Inspection from a pit might be done by a woman, if she can be taught to recognize defects quickly enough.

Passenger cars are inspected in the coach yards at terminals and also at large passenger stations along the line, where particular attention is given to the journal boxes, and oil or additional packing is added as needed. Women can re-pack the journal boxes and insert oil.

Air brakes are tested every time a train is cut to make sure that in recoupling the air line is properly coupled up, and that the air brakes are working for the length of the train. This sometimes involves working between cars and does not seem suitable for women, who are generally less agile than men.

Work Suitable for Women:

Carman (inspector)
inspecting freight car trucks (in hump yard pit)
inspecting and packing journal boxes

Motive Power

(a) Round House

In the round house, locomotives are cleaned, serviced, given such minor repairs as may be necessary, and prepared for the next run. Hostlers from the round house move locomotives to and from the outside tracks. Diesel locomotives are usually serviced in a special section of the enginehouse.

Work Suitable for Women:

Clerk
dispatching engines and crews
call boy (if by telephone)
general
Water tester
Welder (portable electric equipment)
Machinist or helper (depending on the terms of the agreement)
lubricating engine motion work
packing valves - steam, air and water
operating drill press
filling grease cups
alemiting
packing driving and truck boxes
cleaning air brake equipment
Boilermaker or helper (depending on the terms of the agreement)
boring and cleaning flues
Electrician or helper (depending on the terms of the agreement)
operating portable crane
cleaning head lamps
Hostler (inside)
Hostler helper (outside)
Laborer
operating turntable
operating chore-boy truck
blacking front ends and fire boxes
polishing front ends

boring and cleaning flues
making grease cakes
cleaning locomotives, underframe and truck with steam pressure apparatus
cleaning Diesel locomotives inside and outside
wiping locomotive jackets, cabs, and cab windows
washing tanks
emptying and cleaning fire boxes
building fires
drying sand and filling sand boxes
cleaning cinder pits
supplying locomotive tool equipment
tending store room
watching engines

(b) Back Shop

In the back shop locomotives are given heavy classified repairs as distinguished from the light running repairs handled in the round house shop. The work in the back shop is divided among a number of separate shops or gangs, as follows:

Erecting Shop
Blacksmith Shop
Boiler Shop and Tank Shop
Electrical Shop
Machine Shop and Tool Room
Wheel and Truck Shop
Rod and Link Shop
Tin and Pipe Shop
Pattern Shop
Power House

In accordance with union agreements the workers in these groups are classified as machinists, boilermakers, blacksmiths, sheet metal workers, electricians, carmen, helpers and laborers. There are subordinate classifications of helpers and apprentices in each trade.

Erecting Shop

In the erecting shop, locomotives are stripped in varying degrees according to the class of repairs called for. The various parts are sent to the shops where they are to be handled, while work is being done in the main shop on the frame with cylinders and valve chests still attached. After all the parts are repaired or renewed as required, they are reassembled on the frame and the locomotive is made ready to leave the shop.

Work Suitable for Women:

Welder (electric & oxyacetylene)
light work
Electrician or helper (depending on the terms of the agreement)
operating overhead crane
operating motor
turning motor on and off for mechanic
squaring valves in driving wheels
Machinist or helper (depending on the terms of the agreement)
helping to erect fittings and grab handles on boilers and cabs
operating portable grinder
grinding super heater pipes and headers
grinding steam pipe joints
operating bolt lathe
operating planer
shoe and wedge work, (if set up by a man)
operating portable miller
squaring drive pedestals for roller bearings
alemiting engine rods and motion work
Carman helper
installing cab curtains
Laborer
cleaning, sweeping and odd jobs

Blacksmith Shop

The work in this shop consists largely of welding, forging, shaping, bending, tempering and hardening metal parts of locomotives and cars; dressing tools and repairing springs. Most of this work is too heavy for women though there are a few lighter jobs upon which women can be used.

Work Suitable for Women:

Welder (electric and oxyacetylene)
light material
Blacksmith or helper (depending on the terms of the agreement)
operating steam hammer up to 1500 lbs.
forging small tools and other light material
operating forging machine
forging bolt heads

operating pneumatic hammer
light work
operating bolt threading machine
operating machine cutter
cutting iron bars

Boiler Shop and Tank Shop

The work of this shop includes laying out, building and repairing boilers, tanks and drums and other sheet metal work. Most of this work is too heavy for women.

Work Suitable for Women:

Welder (electric and oxyacetylene)
Carman or helper (depending on the terms of the agreement)
scraping and washing tanks
fitting and grinding valves
spray painting tanks
painting cabs
applying fittings to cabs
installing tank hose
Electrician or helper (depending on the terms of the agreement)
operating overhead crane
Boilermaker or helper (depending on the terms of the agreement)
operating punch press (if lever is adjusted to avoid high reaching)
operating drill press
operating spindle drill
operating radial drill
operating bolt cutter
rivet heating
fitting and applying small rivets
fitting bolts and tightening nuts on tanks and boilers
drilling tell tale holes
removing staybolts
staybolt tapping
re-setting flues
attending tool room
Laborer
sweeping and cleaning

Electrical Shop

The work of the electrical back shop consists mainly of the repair of heavy traction motors, including those for Diesel locomotives. Very few small motors are handled here. The work requires dismantling, cleaning and reassembling motors of 250 to 300 HP. Many of the parts are heavy and hard to handle. There is great variety in the type of motors. Out of some 2,000 motors handled in the shop surveyed there were estimated to be about 1,200 different kinds. Therefore, a considerable number of skilled and experienced workers will always be necessary. However, if the work is divided up there are certain lighter operations to be performed on most motors which women can be trained to do.

Work Suitable for Women:

Electrician or helper (depending on the terms of the agreement)
- buffing and cleaning small and medium parts of motors
- cleaning parts with small portable buffer
- spraying field coils
- removing insulation between clips of commutators
- cleaning and repacking insulation
- cleaning laminations of armatures
- winding small armatures
- overhauling generators
- washing filters in air conditioning units
- attending tool room

Laborer
- cleaning and sweeping

Machine Shop and Tool Room

In the machine shop, work is done not only for the local back shop, but also in filling shop orders sent in from all parts of the railroad. In the tool room the work consists of making and repairing all company tools, including the maintenance of all the heavy machine tools used in the back shop, repairing pneumatic hand tools, and repairing valves, such as safety pop valves, feed valves, signal valves and pump valves.

Although many of the positions in the machine shop, and especially in the tool room, require technical knowledge and mechanical skill, involving working to very fine tolerances, a large number of these jobs can be adapted so that women with intelligence and alertness can handle them satisfactorily after

a period of training. Women have considerable dexterity with their hands and learn quickly to operate the smaller machines with speed and precision, particularly when only one kind of operation is involved.

When the material to be handled is heavy, women can be assisted by mechanical devices such as hoists and cranes, portable or power rollers. Sometimes the positions of levers on machines can be changed so that less reaching is required, and additional leverage obtained to reduce the pull necessary to operate the machine. Height of machines can be adjusted for smaller workers by the use of platforms, and often a seat will make the work less arduous without impairing the efficiency of the operator.

Some of the heavier portable power drills and grinders are not suitable for women. Even if they have the physical strength to handle the tool when it is running smoothly, there is danger of a kick-back when it hits an obstruction which may force the tool from their grasp and cause an accident. In some cases the handles of tools may need to be reduced in size to conform to women's smaller hands.

In certain cases where the material to be handled is light or can be lifted by crane or hoist, women can be taught to set up their own work on simpler jobs. In certain cases where the time required to set up the job is short in comparison with the time required for completing it, a trained man may set up the work and a woman be left to tend or operate the machine. This can be done to advantage where there are a sufficient number of such jobs to keep a man occupied in setting them up.

Work Suitable for Women (on the machines in the shop surveyed):

Welder (electric)
Machinist or helper (depending upon the terms of the agreement)
operating milling machine, #3 Cincinnati small and large gear cutting
operating shaper, 26", Gould and Eberhardt all types of small work
operating radial drill press, 6', American Tool Company
operating Doall metal saw, 26", Doall Company
operating turret lathe #2, Warner and Swasey turning small bolts and pins
operating tool grinder, 1½", Cincinnati grinding large and small tools

operating Kwick-way grinder
valve grinding
operating Marvel High Speed saw
making metal bushings
operating other lathes, planers, millers, drill presses, grinders, saws and bolt threaders, when the material is not too heavy, on such operations as: thread cutting, die grinding, jig boring.
inspection of cracks
measurement of small parts
dismantling, testing, lapping, filing and seating valves, including signal, feed, brake, distributor, triple, safety pop, airbrake equipment, pump governors, and bell ringers
attending tool room
Electrician or helper (depending on the terms of the agreement)
operating overhead crane
Laborer
cleaning and sweeping

Wheel and Truck Shop

This shop is responsible for the repair of locomotive driving wheels and trailer wheels, engine trucks, tender wheels and steel car wheels. The work involved is principally heavy, such as removing wheels from axles and rims and remounting them, turning tires, finishing axles, planing crossheads, turning and fitting brasses, boring cylinder castings and other heavy parts, but there is some lighter work, which women can do.

Work Suitable for Women:

Welder (electric)
adding metal to driving boxes, (if lifted by air hoist or overhead crane)
Welder (acetylene)
welding miscellaneous small parts
Machinist or helper (depending on the terms of the agreement)
operating small wheel lathe
turning tires of trailer, engine truck, tender and steel car wheels, (if a man sets up the job)
operating boring mill, 52" Gisholt

making cylinder packing rings (if a man sets up the job)
operating lathe
finishing packing parts
operating small shaper (if trained to set up the job)
Electrician or helper (depending upon the terms of the agreement)
operating overhead crane
Laborer
cleaning and sweeping

Rod and Link Shop

The rod and link gang repairs driving rods and side rods of locomotives and the various parts of the motion work. The main rods are large and too heavy for women to handle, but there is much work which women can do on lighter parts, such as small rods, bushings, pins, cranks, yokes, bars and union links.

Work Suitable for Women:

Welder (electric and oxyacetylene)
welding small parts
Machinist or helper (depending on the terms of the agreement)
operating drill press
small or medium work
operating table drill
operating small engine lathe
working on bushings and pins, valve and reach rods, eccentric rods, combination levers, radius bars, bell cranks, reversing yokes and union links
operating small turret lathe
working on bolts and pins
operating metal saw, 15" blade
operating straight grinder
light work
operating heel grinder
light work
operating shaper, 14" stroke (with help for lifting heavy work)

Tin and Pipe Shop

The work in the tin and pipe shop is handled by sheet metal workers and pipe fitters. It covers a great variety of

jobs, such as renewing the lagging on locomotive boilers, cutting and rolling boiler jackets, bending, threading and welding pipes. The tinners also make wash tubs and buckets, and place metal linings in boxes. Women can do the lighter pipe threading and welding and serve as helpers on the heavier work.

Work Suitable for Women:

Welder (electric and oxyacetylene)
  welding pipe joints
Sheet metal worker or helper (depending on the terms of the agreement)
  working on boiler jackets
  operating pipe threading machine (if pipes are carried by men and if a shelf is placed on the machine)
  soldering and leading (if enough work of this type)
  stripping and replacing boiler lagging
Laborer
  cleaning and sweeping

Pattern Shop

The railroad used as a basis for this survey has no foundry and obtains its castings from an outside contractor. There was less work to be done in its pattern shop than on most railroads. However, when there is enough work, women can assist.

Work Suitable for Women:

Pattern maker helper
  sanding and shellacking patterns
Laborer
  attending store room
  cleaning and sweeping

Power House

The power house furnishes steam for heating the shop buildings, pressure steam for washing locomotive trucks and wheels at the wash pit, and power for all the hydraulic machines in the shops. Even when the boilers have automatic coal stokers, the job of fireman could hardly be handled by a woman because of the weight of the long bar used in breaking up clinkers. Women could work in the engine room, oiling and cleaning engines and polishing brass.

Work Suitable for Women:

Laborer
cleaning engines
sweeping, scrubbing, and polishing

Freight Car

Freight cars requiring only very light repairs may be put in condition while still in trains in the freight or classification yards; those requiring more attention than can be given in such a limited time are cut out of the trains and sent to the repair tracks (rip tracks) in the freight yard; those needing still heavier or classified repairs are sent to the freight car shops.

(a) Freight Car Yard (Rip Track)

In the freight car yard there is a certain amount of office work in keeping records of the car repairs, writing bills covering these repairs, and handling time cards. These records are very important because of the necessity for billing foreign roads for work done on their cars in transit.

On the receiving tracks of the repair yard, inspectors again examine each car, noting the defects already listed in the first inspection and sending the car to the proper track for its class of repairs.

In the work of dismantling cars, cutting the steel body frames with acetylene torches is too heavy for women. Elsewhere in the repair yard, in the airbrake shop, and the storehouse there are, however, a few jobs which women can do.

Work Suitable for Women:

Clerk
Carman or helper (depending on the terms of the agreement)
repairing triple valves
spray painting
stenciling
packing journal boxes
Laborer
attending store room
cleaning and sweeping

(b) Freight Car Shop

The freight car shop is equipped both to repair and build freight cars. In the railroad shops visited only repair work was in progress, but the rebuilding necessary was in many cases almost as heavy as building a new car since it involved making many new parts.

In the body shop some metal parts are cut out with acetylene torches, while other parts are removed for cleaning and for straightening in a large bulldozer machine after heating. Most of this work is too heavy for women, including the use of the heavy shearing machine and reamer. However, women can assist the carman with work on wood cars and on lighter metal cars such as cabooses. Even in the blacksmith and truck shops there are a few jobs suitable for women.

Work Suitable for Women:

Body shop
- Acetylene cutter
- Welder (acetylene)
- Carman or helper (depending on the terms of the agreement)
  - heating and bucking rivets (car body not truck)
  - nailing interior woodwork
  - fitting and bolting floor planks
  - attending tool room
- Electrician or helper (depending on the terms of the agreement)
  - operating portable crane
  - operating overhead travelling crane
- Laborer
  - filling bins with rivets and small parts
  - cleaning and sweeping

Woodworking mill
- Laborer
  - removing nails and trimming old lumber
  - tailing from power saws, with roller when necessary (if not contrary to state laws)

Blacksmith Shop
- Blacksmith or helper (depending on the terms of the agreement)
  - operating light metal power shears
  - operating heater furnace
    - working on small parts

Truck shop
- Welder (acetylene)
  - light work
- Acetylene cutter
  - light work

Carman helper
packing journal boxes

Passenger Car

(a) Passenger Car Servicing

Passenger cars in transit receive attention during stops at major stations. The journal boxes are examined and oiled as necessary, the water tanks filled, and drinking fountains and dining car refrigerators iced. Sometimes coach seats have to be turned, cleaners gather up trash in through coaches, replenish supplies of paper towels, soap, and toilet paper.

Work Suitable for Women:

All station servicing

(b) Passenger Car Yard

At the ends of train runs passenger cars are cleaned, serviced, inspected and given light repairs in passenger car yards, generally referred to as coach cleaning yards. Women can do very satisfactory work as cleaners, but cannot do much repairing since it generally involves heavy work on the equipment under the cars.

Work Suitable for Women:

Carman helper
packing journal boxes
Laborer
coach cleaning (exterior and interior)
watering and icing cars

(c) Passenger Car Shop

When passenger cars need heavy repairs they are taken out of regular service and sent to the shops for reconditioning. On some railroads the passenger car shops are equipped not only to recondition cars, but to rebuild or remodel them or to build new cars. In the shops surveyed, the work in hand consisted chiefly of reconditioning.

The work is handled in various shops:

Body and Paint Shop
Electrical Shop
Wheel and Truck Shop
Pipe and Tin Shop
Upholstery, Carpet and Cabinet Shop

Body and Paint Shop

In the main shop, or body shop, car furnishings are removed, sent to the appropriate sections to be renovated, and then returned to the reconditioned car. While this work is being done, the car body itself is repaired and painted inside and outside.

Work Suitable for Women:

Welder (electric and acetylene)
light work
Carman or helper (depending on the terms of the agreement)
riveting and bucking rivets
light work
assisting with general repairs
heating rivets
repairing steam and air hose
removing paint from outside of cars
spray painting
scraping paint from glass
packing journal boxes
Laborer
removing and installing car furnishings
cleaning and sweeping

Electrical Shop

In the electrical back shop repairs are made on the generators, regulators, batteries and other car lighting and air conditioning equipment, and the electric brake equipment of streamlined trains. The work consists of cleaning, repacking and winding 32-volt car lighting armatures, breaking down and completely overhauling generators, adjusting regulators, washing and recharging storage batteries some of which weigh as much as 800 pounds.

The storeroom for electrical supplies in this shop did not have a stock attendant, although there may be such a position on some railroads.

Much of the work in this shop is highly skilled and heavy, but a few jobs can be performed by women.

Work Suitable for Women:

Electrician or helper (depending on the terms of the agreement)

overhauling generators
light work only
winding armatures (3-20 KW)
cleaning and repacking insulation
washing and oiling filters in air conditioning system (if removed from cars by men)
assisting with rewiring of cars

Laborer
assisting in cleaning batteries
attending storeroom

Wheel and Truck Shop

In the wheel and truck shop the work is generally very heavy. Trucks are completely overhauled, springs repaired or renewed, wheels bored and wheel tires turned. The work on roller bearings requires skilled mechanics.

Work Suitable for Women:

Machinist
operating wheel lathe (with help of an air hoist and another person to roll and hoist)

Laborer
cleaning and sweeping

Pipe and Tin Shop

In the pipe and tin shop work is done on metallic steam hose connections, also bending, shaping and soldering tin. Much of the work is light enough for women's physical limitations and calls only for skill and training. The tinsmiths make water tanks, line ice boxes, and install the interior finish in dining car kitchens. The pipefitters thread, bend and install pipes and buff out metallic steam hose connections.

Work Suitable for Women:

Sheet metal worker or helper (depending on the terms of the agreement)
cutting light metal with a hand power circle cutter
bending, shaping and soldering light metal for water tanks, ice box linings and interior finish of dining car kitchens.
buffing out metallic steam hose connections
threading pipe
recovering pipes under the cars

Upholstery, Carpet and Cabinet Shop

In the upholstery shop, coach seats, lounge and dining car chairs are cleaned and the upholstery renewed or redyed as necessary. Rattan seats are cleaned, bleached, stored in a steam room for drying, then varnished and dried again. New carpets are sewed by hand in the carpet shop and pieces set in to repair worn ones.

In the cabinet shop the frames of seats, chairs and other furniture are repaired or made new. The shop is equipped with power saws and drills and a morticing machine.

In the upholstery shop are also handled the miscellaneous jobs of painting window frames, sanding, staining and varnishing chair frames, washing lamp globes, and painting and stenciling signs.

Work Suitable for Women:

Carman (upholsterer) or helper (depending on the terms of the agreement)
- upholstering car seats and furniture
- operating power sewing machine
- making locomotive cab curtains, caboose cushions, window blinds, head rest covers, draperies and stitching seat upholstery
- patching upholstery by hand
- repairing mechanical parts of seats
- sewing carpets by hand

Carman (cabinetmaker) or helper (depending on the terms of the agreement)
- making and repairing wood frames of seats and furniture
- operating power saw
- operating morticing machine
- operating drill

Carman (painter) or helper (depending on the terms of the agreement)
- painting window sash
- installing window sash
- removing varnish, sanding, staining and varnishing chair frames
- hand painting and stenciling signs
- washing lamp shades and scraping gl-

Stores

(a) Storehouse and Platform

In the general storehouse and platform are kept the material and supplies needed for the entire railroad. These materials are requisitioned from the purchasing department which orders them either from outside companies or has them made in the company's own shops.

The storehouse office force handles priorities, writes orders in accordance with company specifications, issues shipping instructions, follows up the orders, hurries shipments when it is necessary, maintains records of orders and stocks, records of credits for material returned for scrap or reclamation, makes reclamation statements, and payroll statements.

In the storehouse materials are stocked in sections, each handling material and supplies of a certain class. Each section is supervised by a stockman who is assisted by material handlers. The material handlers store the materials in the proper places and fill orders. The stockman is responsible for keeping a constant supply of materials on hand. Some of the materials are stored in the outside yard. Materials are carried in hand trucks or in small electric trucks to and from various sections of the storehouse and yard. Truckers are also needed to unload and load the freight cars at the storehouse platform, and haul the material to the proper locations. These gangs also include material checkers. Heavy materials are unloaded and loaded in the yards by cranes and hoists of various kinds.

Work Suitable for Women:

Stockman (all sections)
Stocktaker
Stockbook clerk
Material handler, storeroom (if men and women are used together in numbers proportionate to the weight of the material, except locomotive parts and oil containers)
Trucker (if there is one man or more in the gang)
loading and unloading cars with stores at the platform
Checker
checking truck loads with bills of lading
Laborer
piling light bar iron with crane
loading and unloading timber with suitable roller
loading and unloading light iron parts such as tie plates

sorting light iron parts such as the plates and angle bars
piling angle bars, rail braces and transit clips weighing up to 100 lbs by dragging

(b) Reclamation and Scrap Dock

In the reclamation section of the store yard used material, sent in from all sections of the railroad, is unloaded and that which is in usable condition is sorted and distributed in the store house yard. That which can be repaired and used again by the company is sent to the reclamation shed or yard, and that which cannot be used further is prepared for sale as scrap.

The scrap is sorted according to the nature of the metal or alloy, and large pieces are cut with acetylene torches into suitable lengths for handling in cars and as desired by the steel mills for charging the furnaces. Much of the work of this department centers around the sorting of the material to be reclaimed. A special fabricating division cuts the metal frames of freight cars and welds them into light trusses for building work.

In the reclamation shed spikes, bolts, rail anchors and tie plates are straightened, threads on bolts and nuts are cleaned and oiled, and small metal parts are cleaned and welded. Cement is reclaimed from emptied sacks, paper and burlap bags are baled in a compression machine, zinc is reclaimed from flashlight batteries, and greasy tinware and paint buckets are cleaned in a vat of caustic soda. Journal box lids are repaired, sections of good hose reclaimed from used hose and tested, tinware and lamps are cleaned and repaired by soldering or welding.

Scrap dock foremen check and weigh incoming and outgoing shipments of scrap and lumber, and make switch lists for the crew switching the cars at night.

Work Suitable for Women:

Welder (electric and oxyacetylene)
Acetylene cutter
cutting scrap metal
Electrician or helper (depending on the terms of the agreement)
operating crane (gantry, box type)
lifting heavy iron material
Craneman
operating portable steam crane
operating portable gas crane

Laborer
operating hydraulic press
straightening rail anchors, cold
operating air compressor
reclaiming zinc from batteries
operating wire brush machine
cleaning track bolts and nuts, also
sorting and oiling by hand
operating nut tapping machine
operating tumbler
cleaning cement sacks and smaller metal parts
operating baling machine (scrap paper, burlap and rubber)
straightening spikes with hand or power hammer
unloading box cars and classifying scrap metal
cleaning used tinware in caustic solution

V. TRANSPORTATION (OTHER THAN TRAIN, ENGINE AND YARD)

Dispatcher's Office

The position of train dispatcher is one of great responsibility and requires long training and experience, which no new employee, either man or woman, could be expected to have. However, in positions in which the traffic is light responsible women may be trained to handle the dispatcher's work or C.T.C. operations.

Work Suitable for Women:

Dispatcher (where traffic is light)
C.T.C. operator (where traffic is light)

Telegraph, Telephone and Towers (Interlocking and Crossing)

Messages between dispatchers' offices and between the dispatcher's office and the local stations are transmitted by telephone, telegraph or printer teletype machine. Women can be trained to send and receive these messages. These are responsible positions requiring some knowledge of operating rules as well as skill and accuracy in operating the machines.

The work on the printer machines is often difficult because it involves the transmitting of accurately spaced material for forms as well as plain text. The teletype machines in the office surveyed were operated at the high speed of 60 words a minute, and some of the best operators were women. In small offices out on line a teletype operator must also be able to transmit and receive by Morse in case of failure of the printing machine.

The signals and switches for the yard tracks of large passenger stations are controlled by interlocking towers, usually manned by two men. One is the telephone clerk who keeps the record of train movements as seen from the tower windows and as announced by telephone or a loud speaker. The other is the towerman or leverman, who observes train movements through lights moving on an illuminated diagram of the station tracks, and sets the combination levers for signals and switches accordingly.

There is usually no physical strain in handling the levers, since the signals and switches are electrically operated, but in the tower of a large station there are many combinations for the large number of tracks, and it takes a long time to learn them so that they can be handled quickly without delay to train movements.

Grade crossings for a number of consecutive streets are sometimes controlled by a single person who operates the crossing gates from a central tower. In these cases the operator is known as a crossing flagman.

Work Suitable for Women:

Telephoner
Telegrapher
Teletype operator (printer machine)
Towerman or leverman-interlocking tower
(if traffic is light)
Telephone clerk (interlocking tower)
Crossing flagman
Crossing watchman

Stations

(a) Passenger

Large passenger stations have many departments, such as the ticket offices, baggage and parcel checking rooms, mail and express departments and the office of the station master. In smaller stations the duties are often combined which may make it more difficult for a woman to handle the work, as for example, when the ticket seller is also required to handle baggage, mail and express.

Work Suitable for Women:

Ticket agent (small stations with assistants for handling baggage, mail and express)
Ticket seller
Information clerk
Accountant clerk

Stock clerk
Cashier
Baggage checkman (if counter is low and with assistance of a man when necessary)
Parcel checkman (if counter is low and with assistance of a man when necessary)
Mail and package sorter
Mail handler helper (assisting with loading and unloading mail)
Tractor driver (electric) hauling mail or baggage from receiving platform to train side
Operator baggage elevator
Operator passenger elevator
Train announcer
Gateman (ticket examiner)
Red Cap Porter (if using baggage truck and with assistance of male train attendants)
Matron
Cleaner

(b) Freight

The work in a small freight station involves daily checking of cars in the yard, supervising the icing of refrigerator cars, handling l.c.l. freight at the station platform, and much inside clerical work, some of which is combined with outside jobs. For example the work of the claim clerk sometimes involves climbing on the top of cars to check the icing of those carrying perishable shipments, and in such cases the work is not suitable for women.

The work at the transfer shed of a large freight house is concerned with the handling of less-than-carload freight both inbound and outbound. This involves receiving freight from incoming trucks or freight cars, handling it by platform truck to its destination in the freight shed or in outgoing cars, checking, weighing, billing, marking and stowing it.

Work Suitable for Women:

Cashier
Rate clerk
Bill clerk
Pick-up and delivery clerk
Yard clerk (in small yards where traffic is light)
Claim clerk (if climbing and heavy lifting are not involved)
Trucker (if working in gang with men to do heavy lifting)
Checker

Dining Car Service

Work in dining cars is complicated by the motion of the train which makes it difficult for cooks and waiters to keep their balance. The problem of housing dining car crews makes it unwise to use women on any but short runs. The sale of food and pillows is usually a function of the dining car department. The work also requires planning menus and inspecting the service.

Purchasing and storing of dining car supplies, including food, chinaware, kitchenware, table silver and linens, and stocking the dining cars is performed by the commissary department.

Work Suitable for Women:

- Dietician
- Dining car inspector
- Steward (if waiters are women)
- Assistant commissary storekeeper
- Commissary clerk (short runs)
- Cook
- Pantry woman (if diner has a separate pantry)
- Waitress (on dining cars on short runs, with bus boys)
- Lunch counter attendant
  - preparing and selling food
- Coach waiter
  - selling food and pillows

Laundry

The railroad laundry washes, irons, and mends all the company linen, including dining car table cloths and napkins and head rest covers for coach seats. The sewing section also makes new head rest covers.

Work Suitable for Women:

- Laundry helper
  - counting, marking, sorting and packing
  - attending drying room
  - hand and machine ironing
  - assisting washing machine operator
  - operating mangle
- Seamstress
  - mending linens
  - making head rest covers

VI (a). TRANSPORTATION (YARD MASTERS, SWITCH TENDERS AND HOSTLERS)

Freight trains are broken up in classification yards and the cars are reassembled on parallel tracks to make up the outgoing trains. Passenger cars are switched in coach yards and sometimes at the stations of large terminals.

Classification yards may be laid out for either hump or flat switching. In hump yards the cars may be slowed down automatically by car retarders controlled by operators located in towers along the down grade to the "ladder". If there are no car retarders, each car or group of cars is controlled by a yard brakeman who rides it to its position on the classification tracks and slows it by the hand brake. There seem to be few jobs in a hump yard which can be handled by women, except where they may serve on daytime shifts as car retarder operators or as switch tenders for switches close together that do not involve much crossing of busy tracks. In flat switch yards cars are assembled on the proper tracks by yard engines.

All freight switching operations are controlled from yard offices. The work includes assigning and calling crews and keeping records of cars and waybills.

Work Suitable for Women:

Crew clerk
Waybill clerk
Car clerk
Yard clerk (if in daytime)
Teletype operator (printer machine)
Janitor
Switch tender
Car retarder operator

VI (b). TRANSPORTATION (TRAIN AND ENGINE SERVICE)

Train crews who operate the freight and passenger trains over the lines of the railroad system are known as road crews, those who handle trains in switch and station yards are yard crews. Positions on these operating crews are those of engineer, fireman, conductor, trainman, flagman or brakeman, according to the type of train. On certain passenger trains there will be a baggageman and train or coach porter.

Work Suitable for Women:

Ticket collector
Road brakeman (passenger, on suburban and short runs)
Yard brakeman (in flat switching yards)

Engineer (Diesel switch engine)
Fireman (Diesel switch engine)
Coach porter

B. GENERAL OBSERVATIONS REGARDING EMPLOYMENT OF WOMEN BY STEAM RAILROADS

I. Before employing many women for jobs customarily performed by men, a survey of all the work done in every department of the railroad should be made by someone who is not directly responsible for the work being surveyed.

The object of the survey would be to analyze the work with a view to breaking down occupations into simpler jobs or processes, reorganizing the work where necessary in order to adapt the jobs to the capabilities of women by making adjustments in machines or working arrangements which will enable a woman to perform the job without undue physical strain or without violating State laws, and shifting those male employees who are not subject to military service into jobs which it is decided only a man can do.

II. Before women are employed to take the places of men, the cooperation of both the foremen and the men working in each department should be obtained. If the men are organized this should be accomplished through cooperation with the local union representatives.

III. As soon as a list of jobs suitable for women has been completed an estimate of the number of women required to fill these jobs should be made and specifications with regard to the qualifications for the different jobs should be drawn up.

Instead of depending exclusively upon applications "at the gate" or transfer of women already employed by the company, a recruiting campaign should then be inaugurated in order to insure obtaining the right woman for each job. Following are some of the recruiting methods which may be used:

a. Ask present employees (male and female) to tell their relatives and friends about job opportunities. Man and wife often make a good working team and this may help to prevent the development of social problems.

b. Place orders for female help with the Railroad Retirement Board employment office or the local United States Employment Service giving information regarding the number and types of women required.

c. Transfer employees temporarily from one division to another as the work requires.

d. Promote or transfer present employees to the more skilled jobs, but only those who are suitable for the particular work to be done.

e. Wherever possible develop the work of the company in outlying communities where there is no man or womanpower shortage and shift work from other places to these points where possible.

f. Make it possible for the married women of the community to work by arranging for part-time employment in as many jobs as possible. A surprisingly large number of jobs can be adapted to part-time workers.

g. In cases of extreme shortage, lend labor to and borrow from neighboring railroads.

h. Cooperate with the community in providing facilities such as nursery schools, housing projects, car-sharing plans in order to release more women for full or part-time work.

i. Make it known that railroad jobs are available for women. While telling the truth about the work play up the romance of the railroad industry; the job has to be sold to the women as well as the women to the company.

j. To relieve emergency shortages appeal to employees or women in outside pursuits to do week-end part-time work.

IV. Since most of the available women have no experience in railroad work and many are unaccustomed to shop routine or industrial discipline they should be very carefully trained, not only with regard to how to do the job but how to behave on the job. It is also necessary in almost all communities to pay employees during the training period. The training should be inaugurated well in advance of the time when the women will be needed for production or service work.

V. It is as important to train foremen, chief clerks and other supervisors of women with regard to basic principles involved in properly handling women employees as it is to train the women themselves.

VI. If women do the same work as the men who preceded them they should be paid the same wage as a man would receive, otherwise they should be paid an amount proportional to that part of the man's job which they actually perform.

VII. In order to encourage replacement of men by women, temporary agreements should be made with the representatives of the employees concerned, which modify the seniority provisions of existing agreements so that they will facilitate increased employment of women.

VIII. Provision of good working conditions, comfortable rest rooms and adequate toilet facilities is very important to women employees. This also helps to offset an unfavorable wage differential in comparison with other war industries.

IX. If the number of women employed at a given point is sufficiently large to justify it, a woman should be employed to act as counselor. She would deal with those work and personal problems peculiar to women, which male supervisors would probably not appreciate or think about.

X. Absenteeism and turnover among women can be materially reduced by cultivating a sense of responsibility through explaining the purpose of the work and how it fits into that of the entire work unit. Healthy competition created by organizing the work on a team basis may also be helpful.

XI. The performance of women workers depends very largely upon the attitude of management towards them and the care and imagination which is shown in helping them to become oriented in a new environment.

XII. The presence of women in a so-called man's industry tends to lighten, brighten, and humanize the atmosphere for all employees, with the result that cooperation improves and output increases, that is, if both the men and the women are handled wisely and firmly from the beginning.

XIII. It is the responsibility of management and labor to get together and explore the possibilities for employment of women with a view to determining what temporary modifications of existing agreements are required in order to permit maximum utilization of women.

C. LIST OF SUITABLE OCCUPATIONS FOR WOMEN ON RAILROADS (OTHER THAN THOSE CUSTOMARILY PERFORMED BY WOMEN)

1. Accountant
2. Acetylene Cutter
3. Archivist, Assistant
4. Ashpitman
5. Assistant Priority Director
6. Assistant to Superintendent of Telegraph
7. Attendant, Boiler
   First Aid
   Fuel Station
   Lamp Room
   Lunch Counter
   Lye Vat
   Parcel Room
   Rest Room
   Salvage and Storage Plant
   Sand House
   Station
   Storeroom
   Toolroom
8. Attorney
9. Auditor
   Traveling

10 Baggage Checkman
11 Blacksmith, Helper
12 Boiler Washer
13 Boilermaker, Helper
14 Bookkeeper
15 Brakeman, Road (Passenger)
Yard (Flat Switching)
16 Cabinetmaker, Helper
17 Car Distributor
18 Caretaker (Small Stations)
19 Carman
Helper
20 Carpenter, Helper (B & B)
21 Cashier
22 Cement and Concrete Worker
23 Chauffeur
24 Checker
25 Claim Agent
Investigator
26 Cleaner, Air Brakes
Caboose
Coach
Freight Car
General
Locomotive
Station
27 Clerk, Accountant
Chief
Assistant Chief
Assistant Order
Assistant Price
Assistant Purchase Invoice
Assistant Statement
Bill
Car
Claim
Commissary
Coupon
Crew
Distributor
Expense
File
Freight
General
Hurry
Information Bureau
Invoice
Lead
Mail
Materials
Mileage
Order Writer

Clerk (continued)
O. S. & D.
Per Diem
Pick-up and Delivery
Rate (Senior and Junior)
Record
Remittance
Report
Requisition
Reservations Bureau
Roundhouse
Seal
Specialist
Station
Statistical
Stenographer
Stock
Stockbook
Supervisor
Tariff (Senior and Junior)
Telegrapher
Telephoner
Ticket
Ticket Sorter
Tonnage
Utility
Voucher
Waybill
Yard
28 Clock Repairer, Helper
29 Coach Porter
30 Coach Waiter
31 Cook, Camp Car
Dining Car
Restaurant
32 Copy Writer (Advertising)
33 Coremaker
34 Craneman (Steam and Gas)
35 Crew Caller
36 Crew Dispatcher
37 Crossing Flagman
38 Depot Passenger Agent
39 Designer and Detailer (Drafting Room)
40 Detective
1 Dietitian
2 Dining Service Inspector
3 Dispatcher, Train (in less difficult locations)
Engine
4 Draftsman
5 Drawbridge Tender
6 Electrician, Helper

Engine Supplyman
Wiper
Engineer (Diesel Switch Engine)
Extra Gang Man
Fire Lighter
Fireman (Diesel Switch Engine)
Flue Blower
Foreman
Gateman
Guard
Hostler, Inside
Outside Helper
Inspector, Equipment and Supplies
Freight Car
Passenger Car
Iron Worker, Helper
Janitor
Journal Box Packer
Kitchen Helper
Laboratory Assistant
Laborer
Lagger
Lampman
Laundry Worker
Legal Assistant
Letterer (Including map coloring)
Librarian
Locomotive Lubricator
Preparer
Machinist, Helper
Mail Distributor
Handler helper
Package Sorter
Manager, Lodging House
Office
Restaurant
Material Supply Man
Materials Handler
Messenger, Delivery
Motor Cycle
Office
Oiler, Shop
Yard
Power Plant
Operator, Air Compressor
Baling Machine
Blueprint Machine
Bolt Cutting Machine
Bolt Lathe
Boring Mill (small)
Box Lathe
Car Retarder

Operator (Continued)
Chore-boy Truck
Compressing Machine (making grease cakes)
Crane, Electric
Steam
Gas
C. T. C. (Less difficult locations)
Dictaphone
Die Grinder
Drill Press
Electric Truck
Elevator (Passenger & baggage)
Engine Lathe (small)
Forging Machine
Heater Furnace (small parts)
Heel Grinder
Hydraulic press
Machine Cutter
Mechanical device
Metal Power Shears (light)
Metal Saw
Microfilm
Milling Machine
Morticing Machine
Motor Vehicle
Nut-tapping machine
Planer
Pneumatic Hammer
Portable Grinder
Portable Milling Machine
Power Hammer
Power Roller
Power Saw
Power Sewing Machine
Printer Teletype Machine
Pumping Equipment
Punch Press
Radial Drill
Shaper
Spindle Drill
Straight Grinder
Steam Hammer
Table Drill
Telephone Switchboard
Teletype Machine
Tumbler
Turntable
Turret Lathe
Twin Chuck Horizontal Drill
Wire Brush Machine
Wheel Lathe

Painter (B & B)
Painter (Carman)
Helper
Pantry Man
Pass Bureau Chief
Passenger Traffic Representative
Patternmaker Helper
Paymaster
Photographer, Helper
Pillow Vendor
Plumber Helper
Policeman
Porter (Using Baggage Truck)
Printer, Helper
Real Estate Agent
Receptionist
Record Keeper (Drafting Room)
Rivet Bucker
Heater
Riveter
Rodman
Sand Dryer
Scrap Cutter
Sorter
Sealer (Freight Car)
Seamstress (Laundry)
Secretary
Sectionman
Sheetmetal Worker, Helper
Sign Painter
Signal Maintainer, Helper
Signalman, Helper
Space Distributor (Reservations)
Spray Painter
Station Agent
Stationmaster, Assistant
Statistician
Stenographer
Steward, Dining Car
Stock Taker
Stockman
Storekeeper, Assistant
Caboose Supplyman
Counterman
Supervisor
Sweeper
Switchtender
Tallyman
Tax Agent
Telegrapher
Telephone Repairman, Helper
Telephoner
Ticket Agent, Assistant
Ticket Collector
Seller
Timekeeper
Toll Collector
Toolroom Attendant
Towerman or Leverman (Interlocking Tower where traffic is light)
Tracer (Drafting Room)
Tractor Driver
Traffic Agent
Train Announcer
Truck Driver (Pick-up and Delivery)
Trucker (Freight and Baggage)
Typist
Upholsterer, Helper
Usher (Station)
Waiter, Dining Car
Restaurant
Warehouseman
Watchman, B & B
Crossing
Engine
Water Tester
Welder, Electric
Oxyacetylene
Employment Supervisor
Yard Checker

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ADVANCE RELEASE

ADVANCE RELEASE: For SUNDAY Papers, June 6, 1943
Pfeiffer -- 4527 OWI-1903

OFFICE OF WAR INFORMATION

(Editors - This is one of a series of releases on women in men's jobs. The next will appear shortly. -- Photographs to illustrate this article may be obtained on application to the Photographic Section, O. W. I., Room 1405, Auditor's building, 14th and Independence, Washington, D. C.)

News Bureau

Highballing ten-ton trucks on cross country routes, operating buses and trolley cars, oiling locomotives and driving taxis are traditional male occupations that are sacrosanct no longer. Early in 1943, more than 160,000 women already were employed in the transportation industry and more are being recruited every day.

First reactions to the employment of women in transportation varied from cool to enthusiastic but the best criterion is perhaps the fact that almost every company that has hired women has come back for more. As a representative of the American Transit Association put it. "The only employers who are still skeptical about the ability of woman are those have not yet hired and trained them."

Eight hours' sleep on a 42-hour run is not unusual for two mothers who took up truck-driving to be near their sons. The women, one from Michigan and the other from Florida, weigh little more than 100 pounds each but they dress like men on the job, handle their ten-wheeled Army trucks like men, and they like their jobs.

"The bigger the trucks are, the easier they are to drive," said one who describes her job as a "cinch." As to their sons, who drive for the same firm -- "Sometimes we see them on week-end," says the mothers.

Another of the women who make up something like one-tenth of the trucking industry's personnel has driven 750,000 miles without an accident in her eight years of cross-country trucking. The wife of a Joplin, Mo. truck-driver, she claims to have no trouble changing tires on a ten-ton truck and says that men rarely stop to help her. "One did once," she said. "He looked at the big tire and then said, 'Well you go ahead. About all I can do is stand around and see

that nothing falls on you.'" This pioneer lady trucker had planned to retire and engage in more housewifely pursuits but she is staying on the job for the duration.

Susan Morningstar, the first woman ever to be employed by a railroad, was hired as a charwoman in the middle of the last century. For many years charring and office jobs were the only types of work available to women on the railroads.

Today the women who have followed Susan into railroading are to be found in the shops, as boilermakers and machinists, in the yards and in the offices. More women are employed by the railroads than by any other branch of the transportation industry, according to the Office of Defense Transportation, yet they make up only about 5 per cent of all railroad employees and many more will undoubtedly be needed. While the percentage of women employees equals that of the last war the total number of women employed on the railroads today is still below the 1920 figure.

One railroad claims that wives or daughters of railroad employees make the most satisfactory women workers. Accordingly, a young oiler and turn-table operator of Green River, Wyoming, should do an excellent job, for her father and grandfather were both railroad mechanics and the uncle with whom she lives is a switchman on the Union Pacific, the same road for which she works. Interested in trains since childhood, she had always lamented the fact that she was not a boy and able to work on the railroad. When the chance came to give up her job as a waitress in a Green River cafe and go to work as an oiler on the Union Pacific, she was among the first to apply and is now happily holding down a man's job at a man's pay.

Few railroad jobs, tough as they are, have the difficulties that beset two "call boys" in El Paso, Texas. One of the "boys" is a widow on her first job who has worked both day and night shifts. "I get by with the day calls promptly," she said, "but the night ones hold me up. When I call a member of the train crew and his wife answers the phone, she usually hesitates a bit and tries to find out who is calling her husband. One night I called one of the crew and he positively

refused to accept the call from a woman instead of the usual call boy. I had to get the crew dispatcher to verify the call." The other girl, a former waitress, has experienced the same difficulty. "At first I had a little trouble with the wives about getting their husbands to the phone, but now they have learned my voice, everything is OK." Both are enjoying their jobs.

Eighty-seven switches in a control tower are the nightly responsibility of a woman, a former beautician, who works at the Jamaica Station of the Long Island Railroad. She shifts the switches in response to lights flashed on a control board by the dispatcher and the magnitude of her responsibility is indicated by the fact that more than 600 trains, carrying an average of 200,000 passengers, pass through the station everyday. She finds the manual dexterity acquired in operating permanent wave machines of use in her present job.

About 94 percent of the companies involved in local transit employed women in January, 1943, according to the ODT. The number of women employed rose from 8,800 in July 1942, to 11,100 in January. In general, the safety record of these women is good as is borne out by North Carolina's experience with women driving school buses. From 1940 to 1942, the number of women employed for this purpose (most of them girls 16 to 18 years old) rose from 100 to 800. During this time not one of the girls was involved in a single serious accident.

The local transit company in Washington, D. C., has hired several women as bus drivers and street car operators and is advertising for more. Their first woman bus driver is a former housewife, whose husband is a Navy cook. Coming from a small town in West Virginia she had never worked before, although she had had several years of driving experience. After six weeks of training she took over a split shift - 6 to 9 in the morning and 3 to 6:30 in the afternoon - for which she receives the same rate of pay as the men drivers. Public reaction has been favorable and the personnel manager says that the women are intensely serious about their work - they also like the pay, the uniforms and dealing with the public.

Women are maintaining other essential civilian services by acting as car-parkers, laundry-truck drivers and taxi-drivers.

A "driver saleslady" is working for the infants' department of a Kalamazoo, Mich., laundry company. With her own truck and special equipment, she handles the needs of more than 200 infant customers.

An Oklahoma City grandmother followed her husband to the naval air station in Miami and got a job as a car-parker because she was tired of sitting at home with nothing to do. A former cowgirl, she has broadcasted over the radio with the "Oklahoma Cowboy Band" and considers parking cars just as easy as riding horses. Several other women have followed her example and the owner of the lot says that they are all doing very well.

A 30-year-old widow supports herself and her small son by driving a cab in Baltimore, Md. She used to keep house for her family but when her husband died she had to make a living. "I couldn't go to school to learn a profession," she said, "because I had to make money right away. Driving was the only thing I could do, and I preferred it to a secretarial or clerical job." She likes the independence and variety of her 7 A.M. to 4:15 P.M. job and averages about 28 fares a day. The vice-president of the company for which she and several other women work, claims that "as a general rule the women are more conservative drivers, have fewer accidents than the men and do as much work." The women reciprocate and their feeling is summed up by one who said she "wouldn't change jobs with any other woman in the world."

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Editors: This is one of a series of releases on women in men's jobs. The next will appear shortly.

- News Bureau

X-15860

Ross--76437

OFFICE OF WAR INFORMATION
OFFICE OF DEFENSE TRANSPORTATION

For Immediate Release
Monday, May 17, 1943

ODT-253

Greater employment of women and development of industry-wide training programs to meet critical manpower shortages of the Intercity Bus Industry were considered yesterday by the manpower committee for the industry and officials of the Office of Defense Transportation.

Loss of drivers, mechanics and other employees through Selective Service calls, and withdrawals for other reasons, threaten curtailment of the industry's services, the committee told ODT officials. The latest United States Employment Service survey of the industry, it was pointed out, shows that personnel needs of intercity buses will rise from 47,654 employees in March to an approximate 50,661 by September.

Already, women constitute about 15 per cent of the industry's total employment. While still predominantly engaged in clerical occupations, constantly growing numbers of women are being hired to fill operation and maintenance jobs, the committee member said. The advisability of breaking down some occupations was considered so that new recruits with only specialized mechanical training may be put to work on maintenance jobs under expert supervision, and it was agreed that a training committee be appointed to correlate training experiences within the industry. This committee, it was explained, will also study the extent to which bus companies have availed themselves of Government training facilities and will consider preparation of industry-wide training programs.

Otto S. Beyer, Director of the Division of Transport Personnel, ODT, who presided at the meeting, congratulated the industry on the self-help measures it has already employed to meet its manpower shortages.

"Our present waste of manpower is largely the result of turnover because of workers' transferring from one job to another," Mr. Beyer said. "This waste is a serious curtailment of the war effort, of which transportation is a most vital part. Every man now in a transportation job must realize it is his patriotic duty to stay on the job where he is realizing his highest skill."

Col. George Baker, of the Bureau of Selective Service, advised early preparation of Replacement Schedules to provide for the orderly withdrawal from the industry of men called to the armed forces.

Colonel Baker told the Intercity Bus representatives that practically every able-bodied man between the ages of 17 and 38 years will be classified 1A by the end of 1943. While some of these may be deferred for special reasons, he said, industry must be prepared to relinquish large numbers of present personnel to the armed forces.

X-15493

Extension of the War Manpower Commission's Employment Stabilization Program on a Nation-wide basis in the near future was explained by Leo Werts, assistant executive director of the WMC. Mr. Werts also urged greater utilization by the Intercity Bus Industry of the services of the United States Employment Service in recruiting new personnel.

Miss Dorothy Sells, Chief of the personnel supply section, of the Division of Transport Personnel, ODT, recounted the effectiveness of the employment of women in the bus industry in England. William J. Micheels, chief of the personnel training section, pointed out the need for "training and more training" to maintain required services of the industry, and outlined Federal training aids available to the industry.

Members of the committee present at the meeting were Ivan Bowen, R. T. Whiting, R. W. Budd, C. J. Schultz, A. W. Koehler, Clifford Graves, Manford Burleigh, Roy Hauer and Hunter Snead.

Ross-76437

ODT-55

M VR

OFFICE OF WAR INFORMATION
OFFICE OF DEFENSE TRANSPORTATION - Manpower

F.
For Immediate Release
Friday, January 29, 1943

A critical shortage of almost 2000 bus drivers, motormen and conductors exists in the Local Transit Industry at the present time, Otto S. Beyer, Director of the Division of Transport Personnel, Office of Defense Transportation, announced today.

The acute manpower need, Mr.Beyer said, is emphasized by the plight of Detroit where, despite increased passenger loads, 269 buses remain idle because of a lack of bus drivers. Also in demand are mechanics, street car inspectors and repairmen.

Mr. Beyer's statement was prompted by an ODT report, based on the November bi-monthly survey of the United States Employment Service. The report shows that a total of 2,098 jobs in the industry were unfilled last November. By May, it is expected that 8,850 jobs will have to be filled.

Despite shortages of equipment and tires, local transit companies throughout the Nation report growing passenger loads. Figures submitted by the American Transit Association show that the passenger traffic of eighty-seven companies increased 36.5 per cent from November, 1941, to November, 1942, and that during November of last year, passenger loads jumped 3.4 per cent. The increase, Mr. Beyer said, is due to curtailment in the use of automobiles and to general increased employment.

Although employment of women in the industry so far has been confined largely to clerical jobs, it was pointed out that many companies are now beginning to use women in mechanical and service occupations and as street car operators and bus drivers. The number of women in the local transit industry is expected to grow appreciably in the coming months, as the manpower shortage grows even more acute.

Programs for the training of new recruits are developing throughout the industry. The survey, which covered 240 companies with 87.6 per cent of the total local transit employment, showed that one in every six companies has reported establishment of training programs. In September, only one in every ten companies was equipped to train new employes. Some concerns have instituted short-trial training for drivers who have had previous experience on heavy truck equipment, while others train new vehicle operators on instruction buses and street cars under competent instructors. Because of the shortage of equipment, a number of companies are endeavoring to work out a program for training of new drivers during the actual service time of buses.

x-9386

Ross-76437

OFFICE OF WAR INFORMATION
OFFICE OF DEFENSE TRANSPORTATION

For Immediate Release
Tuesday, February 9, 1943

ODT-73

Although employment needs of the public warehousing and storage industry are expected to rise only one per cent during 1943, large personnel turnover indicates possible manpower shortages before the end of the year, Otto S. Beyer, Director of the Division of Transport Personnel, Office of Defense Transportation, said today.

ODT reports, based on the latest bi-monthly survey of the United States Employment Service, show that seventy-nine of the 108 companies included in the study had a 7.5 per cent per month personnel turnover during September and October of 1942. The turnover situation is attributed by the USES, in individual instances, to unfavorable working conditions, to wages lower than those offered in war plants, to the irregular nature of the employment and to the grade of workers usually employed.

In order to meet common labor shortages in large warehouse areas such as Chicago and Buffalo, where great number of workers are hired on a part time basis, the USES has suggested that labor pools be established with men employed on a full time basis moving from company to company.

Factors contributing to the instability of employment in the industry were the closing of the fall moving season, completion of harvesting, apple and fruit storage, the closing of the salmon and shrimp season and the freezing of the Great Lakes. In addition, it was pointed out, employment trends were affected by a drop in food tonnage shipped from California, a decrease in certain types of storage demands and government leasing of storage space.

Women constituted 9.1 per cent of the employees in the companies covered by the survey, and all but five concerns reported women workers. While a majority of the women are engaged in office work, a number of companies stated they were also being employed wherever possible to replace men. Few companies are recruiting more non-white labor.

A majority of workers employed in the industry are hired through unions. However, during last September and October, 10 per cent of the new employes were placed through the United States Employment Service. The most recurrent employment demand of the industry is for part-time casual labor, and most of these woekers are hired "at the gate."

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RAILROAD WORKERS

New York Times
August 23, 1943.

Philadelphia, Aug. 22,'43:

"More than 22,000 women, all especially trained for their particular jobs, are now employed by the Pennsylvania Railroad as conductors, repairmen, cleaners and oilers, the company announced today.

"Three out of five of the road's employees are now women, as compared with one out of seven before the war, company officials said. The total working force of the railroad has been increased by 65,000 to meet heavier traffic demands."

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ADVANCE RELEASE

20 Transportation

ADVANCE RELEASE: For Use After 12 Noon, E.W.T., Friday, April 9, 1943
Ross - 76437

OFFICE OF WAR INFORMATION
OFFICE OF DEFENSE TRANSPORTATION ODT-196

American transportation services are employing large numbers of women in a constantly growing variety of occupations, Miss Dorothy Sells of the Office of Defense Transportation, today told the Conference on War and Post-War Demands for Trained Workers.

Miss Sells, who is chief of the Personnel Supply Section of the ODT's Division of Transport Personnel, returned a few months ago from England where she studied the British utilization of women in the transportation industries. In addressing the two-day conference, now in session at Washington, she reviewed the British experience in hiring women for transportation jobs and told of the growing need and opportunity for American women in the transportation field.

"Almost from the beginning, it was recognized in Great Britain that the outcome of this war depended largely upon industrial production and transportation and that the womanpower of the nation would eventually have to be mobilized," she said. "Nearly 20 per cent of all employees on the four main railways and those engaged in local transit in the London area are now women. Women are employed somewhere in almost every type of transportation job except in those few which physical or other limitations render impracticable.

"Though the United States has not been so long at war, women have entered the field of transportation here, too, and the number is now rapidly increasing. The lastest available figures indicate thatat least 160,000 are engaged in the various transportation branches, and the variety of jobs for which women are wanted increases daily.

"There are openings for women in every branch of transportation, air, rail, motor, and in some cases, even in pipeline transportation. Owing to the demand for womanpower in wartime, the standard training period for many occupations has been reduced. It now varies according to the job, to the previous education and experience of the applicant and her individual capability. In many, the training is given on the job, and the trainee is paid during the training period. Some companies, too, pay trainees while they are in training school.

"The need for women in these or other categories is, of course, especially great in areas where war production is concentrated and where local housing, education, or transportation facilities have become so overtaxed that it is inadvisable to bring new families into the locality. As more and more men are inducted in the military services, however, the demand for women will grow in all areas and in all industries. The Division of Transport Personnel estimates that an additional 175,000 persons will be required between January and November, 1943, in all kinds of for-hire transportation. A considerable number of these new employees must be women. In fact, women constitute a major source from which workers of almost all kinds must now be drawn."

X-13413

Labor INFORMATION BULLETIN

MARCH 1943

Praises Work of U. S. Department of Labor

The following is a speech by Senator Elbert D. Thomas (Utah), Chairman of the Senate Committee on Education and Labor, over the National Radio Forum in connection with the Thirtieth Anniversary of the establishment of the United States Department of Labor on March 4:

"The Congress specified in the act establishing the United States Department of Labor that its job is 'to foster, promote and develop the welfare of the wage earners of the United States, to improve their working conditions and advance their opportunities for profitable employment.' Sometimes that is forgotten and the Department of Labor is criticised for acting as an advocate for American working men and working women when in so doing it is but carrying out the will and the mandate of the Congress, the body which created it.

"As chairman of the Senate Committee on Education and Labor I can say that the Department in the last 10 years not only met and fulfilled its administrative duties but it has been a leader in advocating programs which have been of inestimable value to the wage earners of the United States and to the people as a whole.

"Early in 1933 when we were striving to find a way out of the worst depression in our entire history, the Department of Labor took the lead in the following programs designed to overcome unemployment:

"First. A recommendation that there be some quick relief in the way of Federal appropriations to assist the States and localities in meeting the primary relief needs of the people who were then unemployed and had been unemployed for a long time in the depression.

"Second. A program of straight public works. The recommendation for it and the justification for it and the basic figures and information came out of the Department of Labor.

(*Continued on p. 9*)

UNITED STATES DEPARTMENT OF LABOR

FRANCES PERKINS, Secretary

Governors Favor Labor-Law Improvement

Forty-four State legislatures will meet this year, and forty-two Governors have already delivered legislative messages. Eighteen Governors discussed the impact of war upon various State laws and their administration, a number recommending the State war emergency powers or the executive statutory suspension bills proposed by the Council of State Governments. Several Governors asked the legislature to study the wartime need for flexibility and speed, and to set standards for the executive to follow or otherwise legislate appropriately.

Eleven Governors recommended study or liberalization of workmen's compensation laws. Especially significant is the statement of Governor McGrath of Rhode Island:

> There exists here a great reservoir of . . . labor among workers who have partial disability and handicaps. With certain amendments to our labor laws these people can again be made available to industry. Employers hesitate to hire a worker now who has certain types of partial disabilities or handicaps because of compensation liabilities. This objection could be removed, and sources of employment opened to numerous of our fellow citizens falling within this classification, if by law we provide for the establishment of a "Second Injury Fund." . . .
>
> I hope that this year may see progress made in the establishment of a curative center for assistance to workers suffering from occupational injuries. This would provide them with the necessary physiotherapy, occupational therapy, and psychotherapy facilities under proper supervision. Our departmental studies have amply demonstrated that such a program can tremendously shorten periods of disability. Both of these measures will receive the support of social agencies, labor unions, manufacturers' associations, and government agencies.

Modernization of the New Jersey workmen's compensation law was urged by Governor Edison, who asked the legislature to conduct an intensive study. He states: "It does not cover many occupational diseases, notably many of those which recent medical science has shown to arise from industrial hazards. The administrative working of the act needs to be speeded up." He also urged expansion of the industrial hygiene service. Governor Osborn in Arizona also recommended the inclusion of occupational disease.

In West Virginia, Governor Neely called for extending workmen's compensation coverage to farm workers. Harry F. Kelly, Michigan's chief executive, urged enactment of liberalizing recommendations shortly to be proposed by a commission composed of labor, management, and insurance representatives.

Governor Dewey of New York calls "The present systems of unemployment insurance, workmen's compensation, relief and welfare measures . . . a patchwork. They must be integrated and broadened to provide increased service, including medical protection of the health of our people."

In urging the passage of a wage-hour law in New Jersey, Governor Edison said:

> It is true that at the present moment the wartime shortage of labor has brought wages up. But a survey of one square mile in Newark, made for the State Department of Labor at my direction in 1940, and 1941, showed that there were in that area, 3,028 persons subject neither to Federal wage and hour laws nor to State wage orders who were being paid inadequate or oppressive wages. Of the total number, 176, or approximately 6 percent, were being paid less than $5 a week; 474, or roughly, 16 percent, were paid more than $5 and under $10 a week; and 793, or 26 percent, received more than $10 and less than $14.

Admitting that "another survey, if made today, would show these appalling conditions improved," the Governor emphasized, "But the time to provide safeguards against abuses is before abuses occur, not while people suffer under them."

Appalling accident tolls enlisted the interest of a number of chief executives. Says Governor Martin of Pennsylvania:

> There is too much loss of gravely needed manpower through accidents. In America last year there were more than 100,000 deaths and 500,000 injuries caused by accidents. This loss was ten times the number of our casualties during the first year of this war. It is suggested that you examine the existing statutes, rules, and regulations to determine what changes are necessary to improve existing conditions.

The Washington State Department of Labor, according to Governor Langlie, will seek amendments strengthening its powers of enforcement of safety work orders. So will the Rhode Island Department, says their chief executive.

Many Governors discuss post-war problems, some urging the creation of agencies to study the State's relation to such matters and make recommendations. Several recommend the setting up of public works reserves to provide employment at the close of the war.

Lawmakers Show Interest in State Wage-Hour Bills

State legislatures this year are showing more interest in wage-hour bills than in almost any other type of legislation designed to extend labor standards. Connecticut, Illinois, Indiana, Massachusetts, Michigan, Missouri, New Mexico, and Ohio have already introduced such legislation. Other States where such bills will probably be introduced as a result of interest already expressed include Georgia, Kansas, New Jersey, and South Dakota.

Many groups are advancing this legislation to help in preparing for whatever economic consequences follow the war. Anticipating the possibility of drastic wage cutting at this time, Governor

Edison of New Jersey in his message to the legislature said, "The time to provide safeguards against such abuses is before the abuses occur, not while people suffer under them."

At the same time, experience under Hawaii's wage-hour law, passed in 1941, shows that substandard wages are not only a post-war danger. They exist today even in an area faced by severe labor shortages. The Hawaii law provides for overtime payments after 48 hours a week and a minimum wage of 20 cents an hour in some areas, 25 cents in others. Territorial inspectors during the first 7 months of enforcing this law required 365 establishments to pay $30,844.07 to 1,054 employees. Approximately 60 percent of this total amount restored to employees resulted from violations of the minimum-wage provisions. Of the 1,054 employees, 387 were men, a group not covered under the great majority of State minimum-wage laws in effect today.

The United States Department of Labor still receives hundreds of letters from men and women in laundries, hotels, restaurants, and other service industries complaining of low wages and long hours. "This man . . . pays 15 cents per hour; he also works his help from 10 to 14 hours a day," says one. Another letter points out that a dry cleaning plant is " . . . doing the army's cleaning . . . and they are working their labor 9 and 15 hours a day and paying only 17 cents per hour." " . . . I work in a dept. store as a tailor," says another writer. "My salary is $10 per week for 54 hours."

The United States Department of Labor refers these letters to the State labor departments, which usually report after investigation that while such substandard wages are in fact being paid, " . . . there is nothing we can do about it" without legislation. Twenty-two States have no minimum-wage legislation whatsoever, while Connecticut has the only State minimum-wage law applying to men as well as women.

The need for protecting wage earners from substandard wages has been clearly recognized under the national economic stabilization program which provides for wage controls. The War Labor Board by General Order No. 7 has approved increases in wage rates established under authority of State minimum-wage laws. The President's Executive order on the 48-hour week specifically preserves the operation of Federal, State, or local laws relating to the payment of wages or overtime.

Safety and Health Efforts Aid in Greater Production

"Everything required by a modern army when it takes the field," Robert Patterson, Assistant Secretary of War, said recently, "is now being made in New England."

New England's all-out production has meant that a lot of the old, weather-beaten industrial landmarks in that part of the country have now become centers of activity. Agents of the National Committee for the Conservation of Manpower in War Industries have found these plants in great need of safety service.

For example, one plant in an antiquated, ramshackle wooden building, with holes in the floor and loose treads on the stairs, had been employing a few elderly people who knew where all the holes were. But these same conditions now offer serious hazards to the lives and limbs of the new workers that this plant is taking on to fill its war orders. Visiting another plant, a special agent warned the employer that in the first high wind he would lose a lot of windows.

"Night before last," the agent later reported, "we had a regular blow, and he lost 15."

Committee agents are constantly on the lookout for new occupational hazards that interrupt war production, always ready to call in competent medical authorities to help in solving such problems. One special agent found that the labor turn-over among girls handling and sewing cloth in a plant manufacturing army tents was very high. He noted that the cloth gave out a strong odor that irritated the throat and eyes, that girls handling this cloth when it was first unrolled became ill and weak, some of them fainting. The odor, he found, came from a solvent used on the cloth containing petroleum naptha and methylethyl-ketone, harmless if allowed to evaporate; and also chlorinated hydrocarbons and 4.5 percent toluol, which are not classified as harmless. This formula was discontinued in December, but there are still large quantities of cloth treated with it prior to that date.

Committee agents realize that hazards to workers' health and safety are not always confined to the plant. One shoe plant with 260 employees had only 1 eating place nearby. After eating hot dogs there 1 day, several workers became ill and had to be taken home. The Committee agent, in conference with the company president, arranged to have a good noon meal served daily within the plant.

War plants continue, with the help of the National Committee, to make real progress in cutting down accidents. For example, one plant in California followed a Committee agent's recommendations, which included setting up a safety committee composed of a foreman, the plant superintendent, and three workers, with the result that it has had no accidents in the last 4 months in spite of a large increase in personnel. Another plant in New York, after sending supervisory employees to the safety engineering courses sponsored by the Committee, increased its safety personnel from two to four men, who were then able to push accidents down 33 percent in a 4-month period.

513430—43

Federal Government Safeguards Working Youth

Safeguards for the health, welfare, and education of American youth whose services are being demanded by the war program have been advanced by a statement of policy just approved by the War Manpower Commission. This policy, formulated in cooperation with the Children's Bureau of the U. S. Department of Labor, declares:

> In most cases youth under 18 can best contribute to the war program by continuing in school and, when their services are required, accepting vacation and part-time employment . . . In any case, all forms of employment of such youth, including employment in agriculture, must be specially safeguarded. Their services must be used in such ways as to bring about their maximum contribution to manpower needs consistent with the protection of their health and welfare and the fullest utilization and development of their aptitudes, abilities, and interests. The achievement of these objectives requires the active cooperation of young people, their parents, Government agencies, educational authorities, management, and labor.

The basic national policy with respect to youth was stated as follows:

1. School attendance laws and child-labor standards embodied in State and Federal laws should be preserved and enforced, and the minimum standards hereinafter listed not be construed to warrant any relaxation of these laws or lowering of the standards embodied in them.

2. No one under 14 years of age should be employed full time or part time as a part of the hired labor force.

3. Youth under 18 years of age may properly be employed only:

(*a*) After the employer obtains proof of age in the form of employment or age certificates or, in case such certificates are not legally required, other reliable evidence.
(*b*) In work suited to their age and strength, avoiding all occupations that are hazardous or detrimental to health and welfare.
(*c*) Where provision is made for adequate meal and rest periods or time, and facilities therefor, adequate sanitary facilities; and safeguards for health and safety.
(*d*) For periods suited to their age and strength, and in no case for more than 8 hours a day or 6 consecutive days, except as deviations may be necessary where the worker is engaged in continuing farm work of a non-seasonal character and is domiciled at the place of employment, or except as temporary departures from the above standard under adequate safeguards, where permitted for youth aged 16 and 17 under existing Federal or State laws, rules or regulations, may be necessary to meet a special emergency.
(*e*) During hours of day not detrimental to their health and welfare.
(*f*) At wages paid adult workers for similar job performance.

4. Youth aged 14 or 15 may properly be employed only when, in addition to the foregoing conditions:

(*a*) Qualified older workers are not available.
(*b*) The employment is not in manufacturing or mining occupations.

5. In-school youth may properly be employed only to the extent that the combined school and work activities involve no undue strain, and that combined school and work hours, at least for youth under 16, not exceed 8 per day.

6. In-school youth should not be employed during school hours unless the Area or Regional Manpower Director has determined that temporary needs of an emergency character cannot be met by full use of other available sources of labor, in which case school programs shall be adjusted under plans that:

(*a*) Provide for the educational programs of those who take employment.
(*b*) Avoid interference with the school attendance of those who do not take employment.
(*c*) Avoid the closing of any school or grades therein, except to the extent that the hours, terms or curricula are readjusted to preclude the curtailment of educational opportunities.

7. When wartime emergency cooperative arrangements have been entered into with school authorities for the part-time employment of in-school youth as a part of the school program, the employer should be responsible for certifying to the school authorities that such employment will be in conformity with State and Federal laws governing the employment of minors and with the standards contained in sections 3 to 7 above, and the school authorities be responsible for permitting school children to take only those jobs that will contribute definitely to their educational welfare and useful work experience.

8. When it is necessary to transport young people to and from work, safe and adequate means of transportation should be provided, and the period of work and transportation should not exceed 10 hours a day.

9. Where youth under 18 years of age are recruited in groups for agricultural work requiring them to live away from home, prior to placement, assurances should be furnished by appropriate community or other agencies that suitable living conditions, sanitary facilities, health protection, supervision, and leisure-time activities will be provided; and in no case should youth aged 14 or 15 be recruited for work requiring them to live away from home except where such work is in connection with programs conducted by recognized youth-serving agencies that provide close supervision.

10. Any youth interested in work in another area should not leave his own area in search of work without first:

(*a*) Registering for employment at the nearest local office of the United States Employment Service or such other agency as may be designated by the War Manpower Commission.
(*b*) Presenting evidence of parental consent.
(*c*) Being referred by such office to a specific job opening where he can be lawfully employed, and where there are suitable arrangements for housing.

Plan for Greater Safety on Federal Jobs

Federal officials are making plans to reduce accidents on Government jobs as a result of a joint meeting of the Federal Interdepartmental Safety Council and the Society for Personnel Administration.

Secretary of Labor Frances Perkins, Chairman of the meeting, pointed out that even in peacetimes the Federal Government employs thousands of workers in trades, occupations and crafts in which accident exposure is at least as high as that existing in private industry. Today Federal employees are working directly on the production of ships, arms, equipment, and supplies for our armed forces.

She recalled that in 1936 she had brought to the attention of the President the fact that the accident experience among Federal agencies was generally higher than the comparable experience in private industry. As a result of this situation the Interdepartmental Safety Council was created, with the goal that by June 30, 1942, all Government agencies should reduce deaths and injuries to their employees by at least 40 percent.

"When this Council came into being," said the Secretary, "there were 21 . . . establishments forming the major employment exposure in the Federal service. The over-all 5-year record now reveals that only 10 of these show any reduction in accident-frequency rates, while 11 experienced increases Only 2 . . . can boast of attaining the goal . . ."

Most of the agencies which reduced accidents had established and maintained definite safety programs like those typical in large private enterprises. Such programs are essential both in and out of Government service, said the Secretary, to conserve manpower for the purpose of winning the war.

Wayne Coy, Assistant Director of the Bureau of the Budget, reviewed the Federal accident record for the 5 years which have elapsed since the Council's first challenge to reduce accidents. He called attention to the fact that the Government through accidents in 1942 lost an amount of time equivalent to the full-time employment of 8,500 workers for a year. These accidents meant death to 600 workers, injuries to 60,000 more.

Representative Jennings Randolph brought out that the Civil Service Committee of the House of Representatives, of which he is a member, has been authorized to look into the personnel practices of the Federal Government. This committee he continued, while investigating manpower wastage in the Federal Government, has not heard enough about losses through accidents and sickness. He commended the work of the Interdepartmental Council because, he said, "Accident prevention is an administrative problem, not a legislative one, and accidents can and will be prevented when agency heads, personnel officers, bureau chiefs, and supervisors at all levels recognize their responsibilities for safety."

Estimating that the time lost through sickness is 10 to 15 times greater than the time lost through accidents, he urged that medical divisions be set up in the Federal agencies for their employees. Before the War Department recently took such action, he said, an average of 1,500 out of 500,000 civilian employees were absent every day because of illness.

The Army Engineers accepted and met the Council's challenge to reduce accidents 40 percent in 5 years. Maj. Gen. Eugene Reybold, Chief of Engineers, U. S. Army, told how his organization achieved this record. First, he said, a specific and comprehensive policy on safety was established and enforced. Second, safety engineering techniques have been applied to physical conditions and equipment. And third, every available method has been used to educate employees in safe work practices.

To illustrate the wide variety of work and hazards involved, the Chief of Engineers explained that his organization has a fleet of nearly 3,000 boats used in river and harbor, levee and revetment work, and flood-control operations.

Major General Reybold showed that the Engineers, during a 5-year period beginning in 1936 and ending in 1940, reduced their accident-frequency rate by 58.6 percent, the severity rate by 32.3 percent. During the emergency years 1941 and 1942, with a total of 680,000,000 man-hours of exposure, the accident-frequency rate was pushed 43 percent below that for the 5-year period, and then 53 percent lower.

"These results," said the Chief of Engineers, "mean the productive use of 6,736,000 man-days in direct contribution to the war effort . . . While we are justifiably proud of our accomplishments, there is nothing that we have done that cannot be equaled or exceeded by any other department of the Government."

Many Women on 48-Hour War-Work Schedule

Women engaged in war production in 1942 were most usually on a schedule of 8 hours a day and 48 hours a week, with a 40-hour week also frequently reported. Beginning rates were from 35 to 95 cents, but rates of from 40 to 60 cents were most common. These facts are drawn from studies made by the U. S. Department of Labor. A representative sample was covered of five im-

portant war industries: Aircraft assembly, artillery ammunition, small-arms ammunition, cannon and small arms, and machine tools. During the summer a comprehensive survey was made in New Jersey of a wide range of "old line plants" that were devoting from half to all their production to war essentials. No information was secured in these surveys as to actual earnings, which depend on hours actually worked by each individual, on whether the worker is on a time or a piece rate, the promotion of certain women to rates above the minimum, their upgrading to higher-paid jobs, and so on. However, for a 48-hour week with time and one-half for all hours over 40, potential earnings for workers at the most usual beginning rates would be from $20.80 to $31.20. (For rates see p. 7.)

Of 60 plants reporting, in the five war industries specified, two-thirds employed women on two shifts, one-third on three shifts. Authorities recommend on the one hand that night work should not be continuous for the individual worker, as the unnatural conditions are likely to produce chronic fatigue, and on the other hand that too frequent rotation of shifts prevents any satisfactory adjustment in eating and sleeping habits. Some authorities recommend a period of from 4 to 6 weeks without change. In the war plants visited, more than half with second or third shifts provided no rotation. In about one-fifth changes were made weekly, in the others biweekly or monthly. In most cases hours on the second and third shifts were the same as on the first.

Eight hours for the first shift was reported by more than half the plants, 7½ or 7⅔ hours by more than a third. Longer hours were 9 in one plant, 10 in one, and 11 in two. In one of the 11-hour plants, women on a second shift worked 11½ hours and were paid for 12. More than half the plants reported a 48-hour week; one-fifth, a week of 45 hours. One had a schedule of less than 40 hours, four of more than 48; 55 hours was the longest.

Thirty minutes for lunch was given in most war production plants, time enough if lunch facilities are near to the workers and adequate in relation to numbers served. A few reported shorter periods, a few longer. With repetitive work, especially such as requires close attention, short rest periods are advisable. These were given women in not quite half the plants. The most usual schedule was 10 minutes twice a day.

In New Jersey in 1942, women worked on two shifts in well over half the plants surveyed, on three shifts in a little less than one-fifth. Both daily and weekly hours were the same for all shifts in most of the plants. In almost one-half of those that employed women or more than one shift there was no rotation of shifts; in the others a change every week was most common.

There were relatively more plants with long hours in New Jersey than among the special war industries. While the schedules reported for the first shift showed an 8-hour day most usual, nearly one-fourth had longer hours, one-eighth having a 10-hour day. Hours longer than 8 were more common in plants making ammunition, gun parts, and other ordnance equipment, certain electrical-products plants, and those making instruments.

A week of more than 40 hours for the first shift was reported by two-thirds of the plants, one of more than 48 hours by nearly one-fourth. Two-thirds of the plants making ordnance equipment and nearly half the instruments plants reported weekly hours of more than 48. The longest scheduled week was 54 hours.

The lunch period usually was the same for all shifts. A half hour was given in three-fifths of these plants, one hour in one-fifth. In 13 plants with no regular time for lunch or only 15 or 20 minutes, a serious problem was presented that may result in lack of proper food and sufficient rest and relaxation. Formal rest pauses aside from the lunch period were the practice in about one-fifth of the plants. The most usual schedule was two 10-minute pauses.

Some picture of women's hours in war industries in New York is afforded by the report on dispensations allowed from the provisions of the State labor laws for women. In November 1942, 367 factories had such dispensations. About two-thirds were given permission to work women on multiple shifts, laying aside temporarily the provision that women may not work between 10 p.m. and 6 a.m. About 60 percent of these plants had schedules within the 48-hour statutory limit for workers on all shifts. In 94 factories longer hours were required on day and night shifts or on day shifts only. Longer workweeks were authorized in 135 factories employing women on a single shift, in 9 of every 10 cases allowing 54 hours or less a week. Those that allowed longer hours were for limited use in emergencies or were for a period of 3 months or less. Rest periods were provided by the employers or were recommended in 25 plants. Since the United States' entry into the war, nearly 1,100 plants have received dispensations from women's hour laws and 859 have been granted amendments or renewals of previous favorable decisions.

A U. S. Census tabulation of a 5-percent sample of persons enumerated in March 1940 gives the number of hours worked in the week of March 24 to 30. The report indicates what constituted a normal workweek in a peacetime economy. One-half the women in manufacturing reported a 40-hour week, while nearly a fifth had worked more than 40 hours. Selecting the main industries that have since converted to war production, the proportions of women then working more than 40 hours were as follows:

	Percent
Iron and steel and their products	22
Nonferrous metals and their products	24
Electrical machinery and equipment	12
Machinery, except electrical	25
Transportation equipment	13

For some idea of the increase in women's hours of work, first with the initiation of defense production and later under actual war conditions, it is necessary to go to periodic reports of average hours worked. These do not represent scheduled hours, since they may be increased by extensive overtime or decreased because for a variety of reasons some employees work only part of the scheduled week. The one complete series of hour records by sex is that issued by the National Industrial Conference Board. During the first 11 months of 1940, women in the 25 manufacturing industries covered averaged from 34 to 36 hours weekly, and 37 in December. During 1942 they averaged about 39 hours in each of the first 11 months, and 40 in December. More indicative of the effects of war production are hours in specific industries. Women's hours in automobile factories varied widely in 1940—from just under 31 to nearly 39. In 1942 the range was from about 39 to 42. In October of each year their average hours in other selected industries in round numbers were—

	1940	1941	1942
Chemicals	39	40	39
Electrical manufactures	39	40	43
Rubber products	36	37	40
Foundries	38	38	42
Machines and machine tools	42	43	43

Average hours were reported by sex in Illinois for the first time in 1942. The range for the first 10 months was: All manufacturing, 38 to 40; machinery and machine tools, 39 to 43; electrical machinery and appliances, 40 to 42; transportation equipment, 42 to 45.

Lower Pay Rate For Women Beginners

In the five selected war industries for which hours have been discussed (see p. 5) beginning hourly wage rates reported for women workers in 65 plants ranged from 40 cents in 6 to 95 cents in 1; the most usual rate was 60 cents, reported in 22 plants, a majority of which were aircraft assembly. Possible weekly earnings at these rates ranged from $16 to $38 for a 40-hour week; from $20.80 to $49.40 for 48 hours, including time and one-half for over 40 hours. Beginning rates were the same for women production workers as for men in 34 plants, more than four-fifths of these aircraft assembly. In all other industries the most common system was to start women at a lower rate than men.

Beginning rates for women in offices were reported in 50 plants in 4 industries, these being below 40 cents in 2 plants. The greatest contrast between office and factory rates was in aircraft assembly. In more than a third of the plants the beginning rate for office workers was below 50 cents, the lowest rate reported for the factory, and in 1 instance was as low as 30 cents.

A definite system of wage progression was the practice in two-thirds of the plants reporting, the proportion varying by industry. Such a system was the rule in aircraft assembly, small-arms ammunition, and cannon and small arms; it was the exception in artillery ammunition and machine tools. The most common plan reported was an increase of 15 cents an hour above the starting rate, given usually in 3 installments of 5 cents each. While in half the plants reporting on length of period the progression took 3 months, in others it took 1, 2, 4, 6, and 12 months. In 1 plant a 10-cent raise was secured only after a year, being given 2½ cents at a time. The higher rates secured by these automatic raises ranged from 50 to 76 cents—$20 to $30.40 for a 40-hour week, $26 to $39.52 for a 48-hour week. A top rate of 75 cents was reported in 16 plants, 76 cents in 1.

It does not follow that women's earnings will never be more than these hourly rates. Since women were fairly new to the industries at the time of the studies, many were still at the beginning rate or working toward the upper rate provided automatically. Further progress was possible with improved skill or upgrading to higher-paid jobs. For example, 12 aircraft assembly plants reported maximum rates for women ranging from 80 to 98 cents. Some workers were on a piece rate with wage increase dependent on individual production. Others were paid a base rate with a group or individual bonus. In no case were actual earnings secured by the investigators.

In the study of New Jersey industries, 132 plants reported women's beginning rates for production workers. These ranged from 35 cents in 1 to 65 cents or over in 3. In 50 the rate was exactly 40 cents; in 23, 45 cents; in 15, 50 cents. The beginning rate was the same for women as men in 54 plants, lower for women in 78. Where the minimum entrance rate was less for women than for men, the difference amounted to 10 cents or more in two-thirds of the cases. In well over half the firms where the minimum entrance rate was the same, both men and women were getting 40 cents or less. According to firm officials, the lower entrance rate for women than for men in three-fifths of the plants was due to women's work at the beginning level being less skilled or specialized than that of men.

A definite wage-progression policy was followed in a significant proportion of the plants visited, but

especially in those making communication equipment, ordnance, and small metal parts. A popular plan was to raise the worker's hourly rate by about 5 cents after service of 3 months or even less. In a number of firms automatic wage raises were spread over two steps and in a few there were three, and even four and five steps, but the total amount of increase seldom exceeded 15 cents. An established wage-progression policy was followed in many firms even where there was no regular learning period. After the basic rate for the job had been reached in the case of learners, or all automatic increases had been earned, further progress depended on skill and seniority. Of the plants reporting, over two-fifths had no regular system. The highest rates secured automatically by women ranged in the various plants from 40 to 80 cents, but 45, 50, 55, 60, and 65 were most usual, being reported by 4, 5, or 6 plants each.

About two-thirds of the New Jersey factory women were paid a time rather than a piece rate. For some 18,000 the current rate was recorded. This was not necessarily the minimum rate in effect. Well over three-fifths of these women were paid a rate of at least 60 cents an hour. The 5-cent interval 65 and under 70 cents claimed a considerably larger group than any other. Rates paid women time workers differed considerably, however, according to industry. Only 2 of the industries represented in the survey, electrical products and small metal parts, paid at least 60 cents to more than three-fifths of their women time workers. In the remaining industry groups less than half the women time workers were paid this much; not quite one-third of those in machine and machine-tool plants were so reported. No women were paid at a rate of less than 50 cents in the aircraft engine and propeller plants, and in each of the industries covered few if any had an hourly rate under 45 cents. Twenty-five percent of the women time workers for whom data were available in instrument manufacture, in contrast to 6 percent in all the industries together, were paid 45 and under 50 cents an hour.

The most highly paid occupational group among the women time workers for whom data were reported were the job setters, followed by machine operators in the electrical-products industry, coil and armature winders, and assemblers. Painters and solderers commanded comparatively low rates.

Women who worked on the second and third shifts, and especially those on the third, generally received a wage differential of some kind. In most cases the differential was a percentage increase or an additional sum above the regular hourly rate. Where the former prevailed, it amounted usually to 10 percent; where the latter, to 5 cents. In a few plants the differential was paid in decreased working hours. For example, in two of the firms women on the third shift worked 1 hour and 1¼ hours, respectively, less than the period for which they were paid. In five plants the second shift worked 15 or 30 minutes less than paid for. Seven plants had reduced hours and had given in addition a percentage or flat increase in rate.

Wages had increased since the defense and war periods began. In the plants reporting, the increase amounted to approximately 16 percent; the rise appeared to be even greater in firms now making ordnance. Assemblers had had an increase of about 21 percent, but the rates of coil and armature winders, maintenance and service workers, and machine operators in the electrical-products industry had risen less than 5 percent.

Transportation Field Opens to Women

Transportation is a war industry carrying the armed forces and civilian war workers to the places where they are needed, shifting raw material and machines to process it—multitudinous services for all classes of citizens. American railroads are handling about 30 percent more business with about 25 percent less equipment. One of the big air lines reports that it is practically 100 percent on a war basis, war freight having priority over civilian passengers. This is probably true of all air lines. One of the pressing questions is manpower. One of the answers must be womanpower. When the First World War ended in 1918, more than 100,000 women were employed by the railroads of the United States. Now the Office of Defense Transportation states that at least 300,000 women may be at work in some line of the industry before the present war is over.

The first woman in railroad work was hired by the Baltimore & Ohio Railroad in 1855. Women in railroading have been employed chiefly in the offices, but since the war emergency there has been a steady expansion into other branches. New white-collar jobs include information-desk work, ticket selling, work as rate clerks, cashiers, timekeepers, and freight claim agents, as passenger agents and freight traffic representatives. Repair and maintenance of equipment is not unlike the type of work women are doing in factories. They are being employed in railroad shops as mechanics and mechanics' helpers, as machinists and machinists' helpers. Women are acting as section hands, helping in maintaining road beds. They work in roundhouses, operating turntables, cleaning and oiling engines and seeing that they are supplied with water and sand. They clean cars and sweep the shops.

Newspaper stories of small groups or of individuals here and there are indicative of jobs that

more women may soon be doing. Women yard clerks go up and down the long lines of freight cars noting numbers and initials of cars so they may be properly listed and returned to their respective roads. They record their destination, loading, and condition. A western railroad has employed a number of women who follow a surfacing crew of men. They "dress the tracks" by building up a shoulder to shed water. This same railroad engaged a woman employment supervisor after more than 70 women had been hired. A woman in charge of 1 of 2 control towers in a busy station has to operate 87 switches in getting trains in and out of the yards safely. Instructions reach her by means of lights flashed on a control board. Women have been hired as watchers to warn track gangs of approaching trains. Stories are told of a woman steam-hammer operator in a railroad shop who has been on that same job since the First World War.

A return visit made to offices of one of the national air lines in the course of a study by the Women's Bureau of the U. S. Department of Labor furnished a vivid picture of the increasing opportunities for women in this field and the growing need for their services. From 1940 to 1942 the number of women in the office increased by about 170 percent, and their proportion advanced from not much over two-fifths to more than two-thirds of all office personnel. In 1940 there was no report on their employment except in offices. In 1942, they represented about one-sixth of maintenance and operations workers and one-third of other employees, including hostesses, ticket sellers, pilots, and technical workers. Both expanding business and substitution of women for men has brought about the change. Of 9 chief clerks in supervisory positions, 5 had been replaced by women. In semisupervisory jobs—heads of department units—25 women had taken men's places. All general clerical, accounting, and bookkeeping positions have been filled or are being filled by women.

In the operations department women are replacing men as flight-control, maintenance, and dispatch clerks, as radio and teletype operators, as meteorologists, weight and balance clerks, and draftsmen. Others are in training to become instrument mechanics and spark-plug cleaners. In the stockroom 35 women have taken over men's work.

General reports from the airplane industry indicate that women are replacing older boys as fleet service clerks, handling luggage, mail, and freight, and refueling the plane. They are moving into shops at other airports as sheet-metal workers, welders, riveters, radio mechanics, machinist specialists, and instrument-repair men where general overhaul work is done. They are in great demand for similar work on Government airfields. They are even replacing men as machine-shop instructors.

At least 11 large cities have begun the employment of women as bus operators and streetcar operators and conductors. A detailed report by the American Transit Association of methods of selection, training, and special problems involved, drawn from the experience of 3 western cities, is timely. Not far from 300 women are employed or in training in these 3 cities. Their accident record is as good as that of men newly employed. The major weakness seems to be a difficulty in maintaining established schedules. It is felt this is due partly to the general and noticeable tendency of women to be extra cautious in the operation of their vehicles, and that they should acquire confidence with experience. While men employees strongly resented the women at first, this soon passed.

Praises Work of U. S. Department of Labor

(*Continued from page 1.*)

"Third. The Wagner-Peyser Act which established well-equipped, free public employment offices also came from the recommendations of the Department of Labor as a method of taking care of the effective placement of persons looking for work where there was work to be had, so reducing the loss and waste of poor placement on the job hunting.

"Fourth. The Public Contracts Act which provides that goods and services bought by the Government in quantities of over $10,000 valuation shall be manufactured under certain well-recognized standards as to hours, wages and working conditions.

"Fifth. The Wage and Hour Act, while permitting unlimited hours of work, tends to discourage too excessive hours by providing for overtime after 40 hours.

"Sixth. Unemployment compensation which is an adjustment for the loss of wages due to the accident of unemployment. Again this had its origin in the studies and recommendations of the United States Department of Labor and its advisory committees.

"Seventh. Contributory old-age insurance for the future and Federal assistance to the States for providing old-age assistance to aged needy persons.

"These are important contributions and

they show how well the Department of Labor has discharged its duties under the Congressional mandate in the last 10 years.

"One of the principal jobs assigned to the Department of Labor upon its establishment was that of adjusting industrial disputes and the records show how successful the Department is in maintaining harmonious relations between labor and management. The Department of Labor is the key to the prevention and settlement of controversies between employers and workers. While comparatively few of these disputes result in strikes many of them call for the services of experienced Department of Labor conciliators.

"During the last fiscal year the Department settled 6,000 controversies, involving nearly 3,500,000 workers. Of all cases brought to the attention of the Department while in the threatened strike or controversial stage, 94 percent were settled without any stoppage of work. Officials of the Department, acting as arbitrators made findings and awards in 453 disputes with the consent of labor and management. These awards, many of which were in vital war production, were accepted.

"That is a record of which the Department of Labor has every reason to be proud. It speaks well for the job which is being done day after day and for the confidence which workers and employers place in the experience and fairness of Departmental conciliators in settling differences which may arise in industry.

"The Department of Labor believes, and rightly, that the maintenance of harmonious industrial relations is one of its most important functions and the present Secretary of Labor has repeatedly emphasized that there is ample machinery of Government to bring about the adjustment of disputes between labor and management without either taking recourse to the weapon of strike or lockout.

"Another important job the Department of Labor is doing now and upon which it has been engaged for some 2 years, is that of accident prevention in plants engaged in war production. More than 500 safety experts are working with safety committees appointed by the Secretary of Labor. They are bringing their services to thousands of plants with war contracts which employ some 4,000,000 workers. The records show that 68 percent of the plants visited, where accident records have been kept, have reduced accident frequency and thereby helped to increase production of guns, and tanks, and planes and ships and all the other material needed by our fighting men in the field, on sea and in the air.

"I have touched only on a few of the many important and worthwhile tasks that the United States Department of Labor has done in the past 10 years, the period which marks its greatest service to the wage earners of the United States. It is doing a fine job and in keeping with its mandate from the Congress 'to foster, promote and develop the welfare of the wage earners of the United States, to improve their working conditions and increase their opportunities for profitable employment.'

"It is to be hoped that the Department will continue its activities along these lines for many times the short span of its present 30 years."

Employment in January 1943

The number of civilian employees in nonagricultural establishments stood at 37,906,000 in mid-January, a gain of three million since January 1942, six million since January 1941, and eight million since January 1940. These figures do not include proprietors of unincorporated businesses, self-employed persons, unpaid family workers, domestics employed in private homes, public emergency employees, and personnel in the armed forces.

The decrease of about a million workers between the middle of December and the middle of January was due almost entirely to seasonal declines in trade and construction. Manufacturing employment was 15,719,000—slightly more than in December. This is the first time since 1935 that manufacturing employment has been higher in January than in the preceding December.

MANUFACTURING

Industries of the durable-goods group employing 7,886,000 wage earners in January gained 1,779,000 workers over the year. This increase was largely confined to the metal and metal-working groups which are now engaged almost entirely on war work. The transportation group

added the largest number of wage earners to its pay roll, more than a million since January 1942 and 70,000 during the month.

Wage-earner employment in the nondurable group in January was 5,625,000, 276,000 above last January. Chiefly responsible for this increase were chemicals and allied products, rubber products, and food and kindred products. Despite large war orders, there was no increase of employment in textiles, apparel or leather products.

Estimated employment in durable and nondurable goods groups in January 1943, December 1942, and January 1942, together with changes over the month and year interval, adjusted to final 1941 and preliminary second quarter 1942 Bureau of Employment Security data

[In thousands]

	Employment			Gains or losses between	
	Current month Jan. 1943	Preceding month Dec. 1942	Preceding year Jan. 1942	Dec. 1942 and Jan. 1943	Jan. 1942 and Jan. 1943
TOTAL, ALL INDUSTRIES	**13, 511**	**13, 482**	**11, 456**	**+29**	**+2, 055**
Durable group	*7, 886*	*7, 781*	*6, 107*	*+105*	*+1, 779*
Iron and steel and their products	1, 691	1, 676	1, 515	+15	+176
Electrical machinery	660	649	493	+11	+167
Machinery, excluding electrical	1, 203	1, 190	979	+13	+224
Transportation equipment except automobiles	2, 068	1, 998	958	+70	+1, 110
Automobiles	640	615	490	+25	+150
Nonferrous metals and their products	405	405	362	0	+43
Lumber and timber basic products	499	515	543	−16	−44
Furniture and finished lumber products	359	365	392	−6	−33
Stone, clay, and glass products	361	368	375	−7	−14
Nondurable group	*5, 625*	*5, 701*	*5, 349*	*−76*	*+276*
Textile mill products and other fiber manufactures	1, 271	1, 287	1, 294	−16	−23
Apparel and other finished textile products	882	886	890	−4	−8
Leather and leather products	361	364	377	−3	−16
Food and kindred products	965	1, 021	925	−56	+40
Tobacco manufactures	96	99	92	−3	+4
Paper and allied products	310	309	329	+1	−19
Printing, publishing, and allied industries	332	342	345	−10	−13
Chemicals and allied products	721	708	496	+13	+225
Products of petroleum and coal	123	124	122	−1	+1
Rubber products	183	180	146	+3	+37
Miscellaneous industries	381	381	333	0	+48

Public Employment

Although war agencies added 87,000 employees during January 1943, the laying off of temporary postal workers who were hired only for the Christmas peak and of TVA construction workers where projects were completed, and seasonal declines in the Agriculture and Interior Departments offset all but 2,000 of the war-agency increase.

During the past 14 months of war, Federal employment rose 1,324,000 or at a rate of 95,000 a month. Over the same period war-agency employment showed a rise of 1,341,000 and other agencies a decline of 17,000. The decline in other agencies, however, was due to the transfer of several offices to war agencies. The largest transfer of this kind occurred in December 1942 when employees of the National Youth Administration, the United States Employment Service, and certain other Federal Security Agency employees were transferred to the War Manpower Commission.

The WPA and CCC further contracted their programs during January 1943 and reduced personnel by 48,700. The war production training

Civilian employment and pay rolls in the regular Federal Services, on construction and shipbuilding programs financed wholly or partially by Federal funds, and on other Federal programs, January 1943

[Subject to revision]

Service or program	Employment	Pay rolls
Regular Federal services:		
Executive	2, 916, 000	$544, 878, 000
Legislative	6, 200	1, 420, 000
Judicial	2, 600	708, 000
Construction, shipbuilding, and ship repair:		
Financed from regular Federal appropriations	2, 228, 200	462, 616, 000
Public housing	76, 500	11, 728, 000
War public works	11, 100	1, 514, 000
Reconstruction Finance Corporation	102, 900	20, 386, 000
Other programs:		
National Youth Administration	171, 000	3, 122, 000
Work Projects Administration	289, 000	18, 590, 000
Civilian Conservation Corps	500	85, 000

program of the NYA likewise reduced personnel by 1,140, but the student work program added 4,580 persons. During the past year the WPA, CCC, and the NYA programs have declined approximately 1¼ million persons and in January 1943 aggregated fewer than half a million.

Federally financed construction (including ship construction and repair) showed an employment decline of 3,900 in the month ending January 15, 1943. Increases were reported on housing, river, harbor, and flood control, and on shipbuilding and repair projects, but offsetting declines were reported on nonresidential building construction and reclamation projects due to seasonal factors and on airport construction because of the completion of certain projects.

The present employment and pay roll for Federally financed construction include for the first time data on ship repair as well as ship construction. The construction data include employees of contractors as well as persons on the direct pay roll of the Federal Government. The latter group are also included in the Federal executive-service figures.

Cost Of Living In January 1943

Living costs of city workers increased 0.2 percent between December 15, 1942 and January 15, 1943, the smallest monthly advance since February 1941. The slower rate of increase was brought about largely by two factors. With new crops from the South prices of a number of fresh fruits and vegetables declined, and the usual January clearance sales of men's and women's heavy wool coats and men's suits in many stores throughout the country brought price reductions in clothing.

The family food bill advanced 0.2 percent from mid-December to mid-January. Among the principal increases were higher prices for poultry (+3.3 percent) and fish (+2.9 percent) used by many families as substitutes for red meats. Prices of some fresh fruits and vegetables declined seasonally.

Clothing costs remained unchanged, on the average, in the large cities over the month. In 11 cities January clearance sales brought about decreases. Elsewhere, however, men's and women's wool coats returned to ceiling levels after December sales. Goods of the quality previously priced were not available in some parts of the country and clothing costs increased because customers were obliged to buy goods in higher price lines.

Costs of fuel, electricity, and ice rose 0.9 percent over the month. Higher mine prices and a Federal transportation tax caused higher coal prices. Fuel oil prices advanced in several cities as a result of expenses incurred by dealers in complying with the rationing program.

Housefurnishings costs remained stable between December 15, 1942 and January 15, 1943.

Costs of miscellaneous goods and services rose 0.3 percent. There were reports of higher medical service charges and higher newspaper rates in several cities.

As an economy measure, rents were not surveyed in January. Since last September when rent control had been established in most large cities, rents have varied little from month to month in the 21 cities covered in the Bureau's Monthly Cost of Living Index. The Bureau's regular survey of rents will be made in March.

Cost of living in 21 large cities

Area and city	Index as of Jan. 15 1943 (1935–39=100)	Percent of change from—		
		Dec. 15, 1942, to Jan. 15, 1943	Jan. 15, 1942, to Jan. 15, 1943	Aug. 15, 1939, to Jan. 15, 1943
Average: large cities	**120.6**	**+0.2**	**+7.7**	**+22.3**
North Atlantic:				
Boston	118.9	0	+8.6	+22.5
Buffalo	124.8	+1.0	+8.5	+26.7
New York	119.8	+0.4	+8.6	+21.0
Philadelphia	119.7	0	+8.2	+22.4
Pittsburgh	120.7	+0.6	+7.7	+22.7
South Atlantic:				
Baltimore	122.6	+0.7	+7.6	+24.2
Savannah	125.3	+0.9	+8.6	+26.2
Washington, D. C	119.4	+0.3	+7.5	+21.1
North Central:				
Chicago	119.6	+0.1	+6.8	+21.2
Cincinnati	119.8	−0.2	+7.2	+23.1
Cleveland	123.1	+0.2	+7.3	+23.1
Detroit	121.0	−0.3	+5.7	+22.8
Kansas City	117.8	+0.1	+7.3	+19.5
Minneapolis	119.0	−0.2	+6.3	+19.4
St. Louis	119.3	−0.4	+6.7	+21.6
South Central:				
Birmingham	121.2	+0.3	+5.3	+23.0
Houston	119.5	0	+6.2	+18.7
Western:				
Denver	119.6	+0.1	+7.5	+21.3
Los Angeles	123.6	−0.2	+8.9	+23.0
San Francisco	124.5	+0.4	+9.3	+25.4
Seattle	125.7	+0.1	+7.7	+25.3

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U. S. GOVERNMENT PRINTING OFFICE: 1943

January-February 1943
Opal Gooden

U. S. Department of Labor
WOMEN'S BUREAU
Washington

WOMEN IN AIR TRANSPORTATION
American Airlines

American Airlines is a commercial airline with headquarters in New York. Flight schedules include Boston, Washington, D.C., Memphis, Nashville, Cleveland, Chicago, Los Angeles, El Paso, Ft. Worth and Mexico City. This company carries more passengers than any other airline.* The material of this report is the result of field visits to the National Airport in Washington and to LaGuardia Field in New York City.

Since the war, passenger and cargo service are on a war priorities basis. All new planes and many experienced crew members have been taken over by the Army Air Transport Command, and a few by the Navy, for war duty. At the same time air traffic, mail and cargo have increased sharply. Air transportation is a designated essential war industry.

The main base for American Airlines is in New York. The overhaul and repair shops, fleet operations, reservations, and part of the executive offices are being moved to the Air Terminal Building in Manhattan because of overcrowding. In Washington, executive offices and operations are located at the National Airport on the Virginia side of the Potomac. Only a small ticket office is maintined in the District.

PERSONNEL

Numbers of Women

Of the 5,860 employees of all classifications for the entire company, 1,666 or 28.3% are women. One year ago 21% were women, two years ago 19.1%. Two years ago women were taken on to supplement men as the industry expanded; for the past year they have also been replacing men called into the armed services. The Personnel Director expects to have at least 50% women before the end of the war.

* See appendix

American was the first airline to hire women for any but stenographic or stewardess jobs. Seven years ago women were introduced to the reservations division, then to the ticket counter. At the time these steps seemed more revolutionary than the more recent assignment of women to ramp agent and shop maintenance work. The women have proved themselves capable and satisfactory.

Salaries and Wages

Pay rates are based on the job without regard to sex. All of the airlines pay identical or approximate beginning salaries throughout the country, have similar policies regarding automatic raises, and have a system of free air travel based on length of service. It is believed that these policies discourage "shopping around between companies for jobs", and facilitate the transfer of employees from one section of the country to another.

Schedules of pay rates are:

Reservations clerks (reservations table, space control, messages, ticket counter), weight control clerks, stewardesses, etc.

$125 a month first 6 months
$140 second six months
$150 end of first year
$ 10 annual increase up to 5 years
$ 15 above scale for supervisors

Fleet Service clerks

50¢ an hour first 6 months
60¢ an hour second 6 months
5¢ an hour annual increase
75¢ an hour for supervisors (plus senority rate)
85¢ and hour for foremen (plus senority rate) Eligible to "bid" for foreman job after 2 years service when vacancy occurs.

Junior Mechanics

50¢ an hour in training
65¢ an hour first 6 months on regular job
70¢ an hour second 6 months
75¢ an hour third six months and thereafter.

Wage scales for more skilled mechanics are correspondingly higher, from $1 an hour for qualified mechanics to $290 a month for lead inspectors, the top classification. Only one woman is a fully qualified aviation mechanic.

Overtime pay of time and a half begins after 48 hours since the Airlines operate under the provisions of the Railway labor Act.

Bargaining agent for shop maintenance workers is the Air Line Mechanics Association International, a company union. Other classifications of workers are not covered by any type of bargaining agent.

A labor-management committee is being organized at the New York base.

Additional Compensations, Benefits, etc.

The policy of free air travel mileage for employees has been somewhat hampered by war traffic. Before the war air employees received not only their own travel mileage based on length of service but also vacation mileage for himself and a relative. For the duration the special vacation air travel mileage is subject to the priorities of war traffic. All employees are entitled to:

1500	miles	of	air	travel	after	6	months	service
2000	"	"	"	"	"	1	year's	service
3000	"	"	"	"	"	2	"	"
4000	"	"	"	"	"	3	"	"
5000	(maximum)	"		"	"	4	or more year's	service

This mileage must be used within the specified time and cannot be accumulated for future use.

A $2,000 life insurance policy, with special sickness, accident, and hospitalization clauses if desired, is available to company employees at a reduced rate, on a group basis after three month's service. Policies are written by the Traveller's Insurance Company and premiums are paid entirely by the employees.

There is also a credit union open to employees.

Hours and Shifts

Around the clock shifts work a 48 hour, 6 day week. Hours are staggered so as to maintain a full force during a department's normal peak period, a skeleton staff during slack hours. These periods are different for some departments so there is no fixed system of shifts arriving and leaving at certain hours three times a day.

Women take their regular turns on the Night shifts. A worker stays on the night shift a month; day and swing shifts change every two weeks. The one day off varies from week to week.

Meal periods are from half an hour to an hour. There are no fixed schedules for the 10 to 20 minute rest periods permitted on each 4 hour work stretch.

Vacations, Sick Leave

Two weeks vacation with pay is given after a year's service with the company and 12 days sick leave.

TYPES OF JOBS ON WHICH WOMEN ARE EMPLOYED

Brief Description, Qualifications, Training

The principal types of jobs on which women are now employed: --

1. Stenographic, bookkeeping, general clerical
2. Reservations (reservations table, messages, space control, ticket counter)
3. Weight control
4. Control Tower
5. Meteorology
6. Link Trainer Instruction
7. Flight Service
8. Dispatching
9. Repair and Overhaul
10. Cleaning planes
11. Food Service
12. Stewardess

2. Planes carry a very limited number of passengers, all of them in a hurry, and flights may be delayed or canceled by bad weather. Inquiries about flight schedules, telephone and telegraph reservations, and all the other multitude of detail necessary to saving a particular seat for an individual passenger, in

addition to finally selling the ticket, are handled in the several sections of the reservation department. The work of each section carefully dovetails with the other sections and clerks are shifted from one to another in order to learn the whole process. Until 5 years ago all of these jobs were held by young men who wanted to learn the airline business. Women were first used on the reservations table where a good telephone manner is necessary. Three years ago the first woman took her place behind the ticket counter. At the New York base, 60% of the reservations clerks are now women.

College graduates are preferred, though high school graduates with some business experience are acceptable. They must be between 21 and 30 years of age. The company training school in New York for all new employees in these jobs has been closed for the duration and training on the job supplemented by classes at each main base has been substituted. Employees attend classes on job time. More women are being used as supervisors and supervisors-in-training.

3. Weight control clerks must be good at lightning speed arithmetic and able to work accurately under pressure. Last minute weight calculations before a plane takes off determines how much cargo, mail, gasoline, and the number of passengers can be taken on for that particular flight.

4. From the control tower the plane is directed to a safe landing on the field below or given clearance to take off. Flying experience, knowledge of radio and meterology are the best qualifications for this work. The top jobs are among the most important in the flying business. Women are largely minor assistants so far.

5. Meteorologist must have the necessary technical college training required by the Civil Aeronautics Commission

6. A Link Trainer Instructor can learn on the job the routine of giving flight problem instructions and checking the results. The instructor gives the pilot in the cockpit of the miniature "plane" a flight problem which must be worked out by instrument ("blind") flying; the trainer records the motions of

the "plane"; the instructor and the pilot check the recorded results.

7. Flight Service included handling baggage, mail, and cargo; loading and refueling and unloading the plane; young boys have always been used on these jobs. The amount of weight lifting requires some assistance from men. It has been difficult to find girls strong enpugh for the work. They must be high school graduates, if possible, between 18 and 30 years of age, about 5'5" tall, weigh at least 130 pounds, have a driving permit; and they must pass a rigid physical examination which includes special attention to back strain. The girls wear coveralls.

8. Dispatching is actually the outdoor part of the operations division, the indoor part being weight control or computing the load. The uniformed attendant out on the field who signals the plane to its exact spot on the landing field and performs similar operations for the take-off is called the Ramp Agent. Girls have been on these jobs a comparatively short time.

9. Under war conditions the four year aviation mechanic's apprentice system has broken down. Few women hold mechanics' licenses. Women on mechanical jobs are very satisfactory on overhaul work where planes are completely dismantled, cleaned, repaired, and rebuilt inside the shop. The jobs are very similar to those in aircraft engine, assembly, radio and instrument plants. Such work is done only at an Airlines main base. New workers begin as trainees in a nearby aircraft school, after 4 to 8 weeks they are put on the job.

10. Like a train a plane is thoroughly scrubbed, cleaned and polished regularly inside and out. The women are said to be doing a better cleaning job than the boys whom they are replacing.

11. Negro women are used most in the food service department where both the special flight menus are prepared and packed and the regular cafeteria food is cooked. This work is all done in the regular kitchens at the airports. No previous experience is required.

12. Stewardesses were the first women hired by the airlines and remain the

only women crew members. Until February 1942 they had to be graduate nurses, American citizens, unmarried, 21-26 years old, 5'2" to 5' 6" tall, weigh not more than 125 pounds. Since that date only the height, weight and not married requirements are the same. Because of the shortage of trained nurses this requirement was dropped. Now they must have at least 2 years at an accredited college and 2 years of work experience, or 4 years of college and one of work experience, be between 25 and 28 years of age. Stewardesses must pass the same physical examination as pilots and other crew members. They must have many social graces and a lot of common sense. The 12 stewardesses on the Mexico City to El Paso route also speak fluent Spanish.

Training is intensive for 2 months at the special school for stewardesses with week-ends used for observation flights.

There is a high turnover, mostly due to marriage. Since the war, 10 American Air Line stewardesses have enlisted in the Army Air Ambulance Service. Recruiting goes on constantly but the successful candidates are few because of the very specific specifications. Only 22 out of almost 200 American Airlines stewardesses have had more than 5 years service.

Pay is the same as for other technical and semi-professional jobs ($125,etc.) except that special living allowances are made for expenses away from the base station. There is almost no opportunity for promotion. The few field supervisors and the "Chief" stewardess were promoted from the ranks.

FURTHER USE OF WOMEN

There are very few jobs women could not do in airline transportation provided they had the training and experience, not excepting all of the jobs of the flight crew and the control tower. On these more specialized and most desirable jobs opportunities for experience are even more limited than for training.

Where heavy lifting is involved, as in Fleet Service and on some of the scaffolding repair work on planes, women cannot be used much more than they are

now.

POST-WAR POSSIBILITIES

It is reasonable to assume that the airlines will expand after the war and will need more employees than before the war. The senority rights of the men now in the armed forces entitle them to their former jobs if they want them.

The company expects that many of their married women employees will leave after the war if they do not need to work. The Personnel Director says that where women have equalled or surpassed men on certain jobs (reservations, instrument repair) the company does not expect to replace them with men. There seems to be a rather liberal attitude toward women evidenced by the fact that they gradually were being introduced into strictly "masculine" jobs several years before the war and were given equal pay.

ABSENTEEISM

No company-wide figures were given for absenteeism but the report was unfavorable for the women on one and two day absences. The Washington Personnel officer said that the women were ill more often than the men and were "out about 75% more than men. "Home responsibilities, the 6-day week and transportation difficulties were recognized as contributing factors.

UNIFORMS

The garments are purchased from the Eastern Isles Importing Co., of Clinton, Massachusetts, and the one-piece suits cost approximately $3.35 each. The material is Wellington Sears #S-1500 in colors, sand and gragreen. The turbans are about 45¢ each and made from Wellington #S-1493 in colors, sand and gragreen. They are worn by shop employees.

These materials are of approximately the same texture and grade as our coveralls for men, and we have reason to believe they should wear as well, if not better, assuming that they will not become as greasy or subjected to the same degree of abuse. In many instances our men's coveralls last as long as two years, and we estimate the average to be in excess of one year.

Stewardesses buy their winter uniforms which cost $80. They are dark blue wool. The company furnishes light weight summer uniforms.

Transportation Problems

War transportation difficulties only aggravate pre-war transportation problems for airport workers. Usually located on the edge of a city with no other industry very close by, airports normally have inadequate public transportation facilities. The amount of time required going to and from work by bus or car is considerable. The system of shift rotation makes regular car pool schedules difficult and bus schedules very unsatisfactory for the workers, especially for those on early morning or late night shifts.

* * * * * * * * *

INTERVIEWS

National Airport, Washington, D.C.

Mr. Jay Abbott, Public Relations
Mr. Charles Startup, Reservations Chief
Mr. R. W. Baker, in charge of Reservations personnel
Weight Control Chief
Mr. William Morris, Fleet Service Chief
Mr. H. D. Sillman, Manager
Food Preparation Chief
Two girls in Fleet Service
Chief Mechanic
Miss Ruth Anderson, Stewardess Personnel Procurement

LaGuardia Airport, New York, N.Y.

Mr. Buell A. Patterson, Public Relations Chief
Mr. Francis G. Malbeuf, Eastern Public Relations Director
Mr. Victor Vernon, Personnel Director
Mr. John Ewing, Reservations Chief
Mr. R. Major, Foreman, Instrument Repair
Mr. Core, Foreman, Radio Shop
Mr. Greenue, Foreman, Electrical Shop

From Aero Digest
September 1942

* APPENDIX

Statistics for the first four months of the year--before the drastic curtailment of schedules--reveal how big a job these companies have really done. For in addition to carrying 1,292,709 passengers, they also carted 10,144,851 lb. of express, much of which was war material or equipment needed by war plants. An an example of how the airlines have increased in importance to the country, a comparison with the first four months of 1941 shows that 47.22% more passengers and 111.8% more express is being flown this year than last. No figures are given for mail poundages, but it is known that substantial gains also have been recorded in this category.

Reverting to the month of April, the domestic lines flew 11,339,905 miles (revenue) carried 404,744 passengers and 2,883,891 lb. of mail, and were operating at the extremely high passenger load factor of 75.68%. They had accumulated a total of 148,607,340 passenger miles and 1,594,732,547 express pound miles as well as 196,363,869 passenger seat miles.

Statistically, American Airlines retained its long-held place at the head of the operators when it carried 122,331 passengers during April. It was followed by Eastern Airlines which carried 63,081 passengers; United, 59,283; TWA, 46,627; PCA, 34,756; Braniff, 15,650; Northwest, 15,095; Delta, 12,074; C & S, 8,282; Western, 7,929; National, 4,843; Mid-Continent, 4,395; Continental, 3,764; Northeast, 3,554; Inland, 1,604; and Catalina, 1,476.

PHILADELPHIA INQUIRER 4-18-'43

TICKETS, PLEASE! WOMEN PROVE SO SUCCESSFUL AS TRAINMEN R.R. MAY USE THEM ON ENTIRE SYSTEM

By Charles W. Duke

Before Pearl Harbor hundreds of men spent their evenings in what psychologists call "phantom travel." Lawyers, doctors, bookkeepers, even factory workers built model railway trains, laid miles of miniature railroads. Before the war halted sale of strategic metals they laid out $200.000 a week on their hobby. "They're tired of monotony," the psychologists said. "Subconsciously they wish to travel. Toy trains are escape."

Nobody took the trouble to wonder if women longed to travel; to get away from the sameness of office work, household tasks, possibly professionsl jobs. But the war has proved that they, too, wished to escape. And the war has brought them their chance. It is a limited chance but more satisfying, no doubt, than model trains running on stamp-size railroads.

To date 15,000 women have gone to work for the Pennsylvania Railroad Company. As stationary firemen, crane operators, boilermakers, blacksmith helpers, ash and pit firemen, roundhouse workers and women brakemen they are taking places of 28,000 men workers whose absence is noted on the huge service flag which hangs in Philadelphia's Broad Street Station. Under direction of William R. Wilson, stationmaster at Broad Street Station, recruits to the new field receive two weeks' instruction from veteran trainman L.D. Flounders. Some wear overalls; others wear two-piece tailored suits made of the same 16-ounce serge as those of male workers. They also wear peaked caps, white shirts, black four-in-hands, black shoes.

Glamor bobs are out; so is colored nail lacquer. Rouge and lipstick are okayed when used with restraint. Each woman employee must be twenty-one or over, five feet five inches tall, and have a high school education.

Their schedule requires them to report to the Broad Street Station crew dispatcher about twenty-five minutes before their trains go out. They then are assigned to cars. Their jobs arelighting the cars, adjusting heat, setting doors, assisting in loading and unloading passengers, calling stations, collecting tickets. They must memorize the order of stations, become familliar with time tables.

One of the first to answer the railroad company's newspaper ad was Jane Dwyer, who hails form Baltimore. She never played with a model railroad but had been fascinated by railroads all her life. When Jane was a child she liked to watch her grandfather, a teacher in the Baltimore Polytechnic Institute, build models of trains. Grandfather's work, as it turned out, was quite super since one of his models now stands in the Smithsonian Institution at Washington.

When Jane was older she would go to the railway station for the thrill of hearing the bells ring, watching the trains pull in and out. Her great sorrow was that she hadn't been born a boy so she could get a job on a train. Realistically, however she fitted herself for work which at least kept her in touch with travel. She learned telegraphy, got a job in the railway terminal.

During six and a half years of telegraphy she moved from Baltimore to New Haven, then to Albany & Chicago. Then two months ago, the help-wanted ads informed her that women were wanted on suburban passenger trains in Philadelphia. She lost no time answering the ad. Now she is one of more than thirty women making runs on the Paoli local, the Chestnut Hill or West Chester and Wilmington branches of the Pennsylvania.

Another woman trainman (they are not called trainwomen) is Kathryn Leeds, of Galveston. She, too, was lured by travel throughout her childhood; four times she made the long trip alone from Texas to New York. A graduate of Sacred Heart Academy, she never had a job until she became a railroad woman.

A few months ago Kathryn's husband moved to Philadelphia to take an essential job. That is how it happened that she was right on the ground to answer the railroad company's call.

Then there is Verna Demmer who was a housewife in Camden, New Jersey. General shortage of help sent her to a clerical position in the Pennsylvania Railroad Company's Thirtieth Street Station. Traveling for her had been limited to street cars, automobiles and ferry boats. A trainman's job seemed like a wonderful chance. Now she declared she doesn't mind in the least getting up mornings in time to bring in the 5:45 commuter's train from Paoli.

The riding public, say railroad officials, thoroughly approve of women trainmen. Women travelers, especially, take a moment to say they are proud of what their sex is doing to help in the war emergency. One elderly woman even insisted upon giving a woman trainman her overshoes on a rainy night. She explained that the family car was meeting her so her feet didn't need protection.

"I'd heard that some men commuters were grouchy so early in the morning and that others would try to flirt," says Mrs. Demmer. "Well, I haven't found them that way at all. There isn't a sign of flirtatiousness. I think they are more chivalrous than they were before the war, too. Anyway I notice more men giving up seats to women."

How well the women trainmen are liked by men co-workers is indicated by the fact that they are being taken into membership by the Brotherhood of Railway Trainmen, the union of conductors, brakemen, flagmen and other railway employees. "We've never had a complaint about any of our women trainmen," says Stationmaster Wilson.

"The arrangement is working out so well." he said. "that the Pennsylvania Railroad is considering extension of the plan to other parts of the system. Wemay have women trainmen all the way from New York and Philadelphia to Chicago and St Louis.

MVR

Ross--76437

OFFICE OF WAR INFORMATION

OFFICE OF DEFENSE TRANSPORTATION

For Immediate Release
Thursday, March 18, 1943

ODT - 151

Local transit which is already experiencing the tightest manpower problem in the transportation field is threatened with a critical shortage of personnel before the end of 1943, Otto S. Beyer, Director of the Division of Transport Personnel, Office of Defense Transportation, announced yesterday.

To avoid or at least to postpone critical manpower shortages, Mr. Beyer said, transit companies are employing part time workers, are increasing the workweek, upgrading present employees, training unskilled workers for skilled jobs, and employing more Negroes and women to fill vacancies.

Basing his statement on the latest bi-monthly survey of the industry by the War Manpower Commission, Mr. Beyer pointed out that January reports showed critical manpower shortages in one or more occupations existed in 14 per cent of the 227 companies covered. These companies represent 87.5 per cent of the employment in the industry. In January, the reported employment in local transit was 233,000 persons. By the beginning of 1944, that figure is expected to rise to about 243,000.

Shortage of vehicle operators is still the industry's most acute problem. The need for operators represented more than half of all personnel shortages in the industry in January, and Mr. Beyer pointed out that additional drivers and motormen are needed to man present idle equipment or new equipment ordered as well as to relieve employees who are now working 60 to 70 hours without time off.

Along with an acute shortage of operators, some companies report an even greater need for mechanics to keep vital equipment in operation.

Labor needs of the industry for the next six months are estimated at 17,600. This figure, Mr. Beyer explained, represents vacancies at the time the survey was made, new jobs the industry expects to fill, and expected replacements of men called to military service.

Absenteeism, although not an acute problem, has become noticeable throughout the industry. The most frequent cause mentioned by companies reporting an absentee problem was long hours of employment without time off.

Employment of women in local transit is on the increase with 94 per cent of the companies covered by the survey reporting women on their payrolls. While the greatest number are still employed in clerical capacities or on unskilled jobs, women are also being used for other types of work, and their employment as vehicle operators, loaders, and even mechanics is becoming more widespread.

In January, Negroes represented about 4.2 per cent of the total employment of the 227 reporting companies. This was an increase over the figure for November when Negroes represented 3.7 per cent of all employees.

About one-sixth of the companies have their own formal training programs. [illegible] have established on-the-job training and are filling vacancies through [illegible]

X-12058

Extracts from letter regarding
Women in Railroad Jobs

Baltimore and Ohio Railroad Company
Baltimore and Ohio Magazine
Baltimore 1, Maryland

July 26, 1943.

.....B & O women are at work as crossing keepers, shop employees, section hands, B & O policewomen, etc.

You may be interested to know that there was referred to me recently, a complaint from a western railroad, to the effect that women were not making good on the tracks. Asked if I wished to make a statement in rebuttal, I immediately interviewed B & O Maintenance of-Way officers, who took the opposite viewpoint, saying that if a women's section gang did not make good it had been their experience invariably to find that the fault lay in the supervision. The western railroad man said his railroad was so restricted by laws in the matter of weight lifting, working hours, etc., that they were not able to get much good out of the women track hands.

Our Mr. Petri, chief engineer of maintenance, said that although in various states through which our lines run there are certain laws governing these points, that regardless of laws there are certain phases of track work which he would never assign to a woman. There are still a sufficient number of men left to jack up the tracks and to lift heavy crossties. Men hate to pick up papers, pull weeds and grass; women on the other hand do not mind it, they like to see the result of their labor, and in keeping our tracks clear they do a finer job than men ever did.

Concerning working hours, Mr. Petri does not advise keeping women on the tracks more than 8 hours. To do so may unfit them for the job on the following day. Most of our women-power for track work is drawn from the homes. The majority of these women have families; many have children. There is plenty of necessary home work that these mothers mustdo after the eight hours of track work. To keep them on the job longer would also tend to increase absenteeism. . . . . .

Letter from whom?

Complete letter is in Turner's file.

→ Margaret Stevens
editor
B & O magazine
to Mrs. Maryland

OCCUPATIONS

TRANSPORTATION - 1944

Webb-76375 ODT-470

OFFICE OF DEFENSE TRANSPORTATION

For Immediate Release
Thursday, January 27, 1944

Cleared and Issued
Through Facilities of the
Office of War Information

A comprehensive report demonstrating where womanpower can be efficiently used in jobs normally held by men, based on a study of a typical American railroad, is now ready for distribution, the Office of Defense Transportation announced today.

As many as 164,000 women, the report said, could be employed on Class I railroads before the end of 1944--61,000 more than they now have--if all such roads would increase the number of women employees to 12 per cent of their total payroll. On four of the Nation's major railroads the proportion of women employed is already 12 per cent or more, but the percentages on all Class I roads range from a high of 13.3 to a low of 2.8.

The survey, undertaken to form a realistic basis for increased utilization of women workers on railroads, contains descriptions of the various departments of the railroad observed, the positions suitable in each, general observations on the employment of women on steam railroads, and a listing of occupations customarily performed by men that women could fill.

In a preface by Otto S. Beyer, director of the ODT's Division of Transport Personnel, it is pointed out that since the replacement of men by women in railroad occupations was first urged by the ODT, the need for such replacements has become acute.

"Though a good beginning has been made, places for many more will have to be found if imminent manpower crises in many localities are to be averted," Mr. Beyer's statement asserts.

The survey was conducted by Miss Dorothy Sells, chief, Personnel Supply Section, ODT, and Miss Olive Dennis, engineer of service, Baltimore and Ohio Railroad. In reviewing the jobs, they kept in mind the physical limitations of women and their lack of skill and experience with mechanical devices. To overcome these limitations where they might affect the employment of women, the survey indicates how specific occupations can be broken down into processes and where mechanical adjustments can be made or safety devices introduced.

Findings of the survey were checked before publication against expert opinion, against lists of rail jobs filled by women on other roads, and submitted to both labor and management groups for comment.

Copies of the publication, entitled "Survey of Jobs Suitable for Women on Railroad A," may be obtained without charge from the Office of Information, Office of Defense Transportation, Washington 25, D. C.

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SURVEY OF JOBS SUITABLE FOR WOMEN ON RAILROAD "A"

January, 1944
Personnel Supply Section
Division of Transport Personnel
Office of Defense Transportation

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PREFACE

Last September the Office of Defense Transportation issued a document entitled "The Railroad Manpower Situation." This Document contained an action program designed to prevent the development of manpower shortages on the railroads. Included in this program was a provision which reads as follows:

"3. Recruit and enlist services of women employees to the fullest extent possible.

> "Railroad management must initiate and promote this part of the program. Individual railroads have of course already done so. The first step in the program would be for each railroad to list all jobs which in the judgment of its management can be filled by women, and then determine how many women by job classification will be required to fill these jobs. Assistance in the recruiting can be obtained from the Office of Defense Transportation, the War Manpower Commission, and the Railroad Retirement Board.
>
> "Some railroad companies, notably the Pennsylvania and the Southern Pacific, have done relatively much more than others in recruiting women employees. Not even the few companies that have been aggressive in this matter have by any means exhausted the possibilities. Railroad labor organizations have both helped and hindered. They have had no uniform policy. They should help consistently by agreeing, for the duration, to the modification of the seniority provisions of their labor agreements which militate against the employment of women."

With a view to helping the railroads, the railroad labor organizations, the Railroad Retirement Board, and the War Manpower Commission to carry out this provision of the Office of Defense Transportation Railroad Manpower Program, a study of railroad work which women can do has been undertaken by Miss Dorothy Sells, Chief, Personnel Supply Section, Division of Transport Personnel, and Miss Olive Dennis, Engineer of Service, Baltimore and Ohio Railroad, who acted as consultant and co-worker with Miss Sells during the period of the study. This study constitutes an on-the-spot analysis of the work performed on one division, and in one large shop and store house of a typical Western Railroad.

Since last September, when the replacement of men by women in railroad occupations was first urged by the Office of Defense Transportation, the need for such replacements has become progressively acute. The women of the nation constitute the largest single source of labor supply still available for transportation occupations. Both in England and here at home women have proved themselves capable in a great variety of railroad jobs for which they were not considered suitable before this war. Though a good beginning has been made by the utilization of over 100,000 women in nearly 90 of the 128 occupational groups for which the Interstate Commerce Commission obtains

regular employment reports, places for many more will have to be found if imminent manpower crises in many localities and at various points on the railroads are to be averted.

Among the thirty-two railroads employing more than 10,000 persons in the United States there is not only a wide diversity in the types of work where it has been found feasible to use women and in the numbers of women employed, but the percentage of total employees who are women ranged in October 1943 from 13.3 per cent on the railroad employing the greatest proportion of women to 2.8 per cent at the lower end of the scale.

Circumstances peculiar to each company no doubt account for many differences of this kind, but the facts indicate that uncertainty about what is suitable work for women has been one of the greatest deterrents to more general utilization of the nation's womanpower by the steam railroads.

Both Miss Sells and Miss Dennis have worked conscientiously on this report, having spent considerable time in the field and in consultation both with supervisors and representatives of employees. They have, in my opinion, done a very thorough job so that it is with confidence I commend their joint effort as being worth serious consideration by those concerned with facilitating employment of women on the railroads.

Otto S. Beyer, Director
Division of Transport Personnel

Purpose of the Survey

The purpose of the Survey was to determine by observation and analysis of operations, what specific jobs are suitable for women, what jobs are not suitable for women, and what jobs with reasonable adjustments can be adapted to the limited physical capacities and experience of the average woman worker.

The Survey was conducted during the period September 26 - October 12, 1943.

A Survey of this kind was undertaken at this time because it was believed that it would form a realistic basis for increased utilization of women workers in the railroad industry as a part of the Thirteen-Point Manpower Program issued by the Director of the Office of Defense Transportation on September 1, 1943.

Selection of Railroad "A"

Railroad "A" was selected for the Survey for the following reasons:

1. It is a western railroad with a manpower problem, but is not located so far away as to entail a great deal of travel.
2. It employs a relatively small percentage of women.
3. Its main facilities are concentrated within a conveniently small area.
4. Its management and labor representatives were cooperative with regard to the survey.

Scope of the Survey

The Survey included most of the jobs in all except the first of the reporting divisions for which manpower figures are collected by the Interstate Commerce Commission, namely:

I. Executives, officials and staff assistants
II. Professional, clerical and general
III. Maintenance of way and structures
IV. Maintenance of equipment and stores
V. Transportation (other than train, engine and yard).
VI (a). Transportation (yard masters, switch tenders and hostlers).
VI (b). Transportation (train and engine).

Some occupations which are obviously unsuitable for women and a few others which are not performed on Railroad "A" were omitted from the Survey. The work involved in several additional occupations was observed on other railroads, e.g. suburban trainwomen and various occupations performed in a hump yard.

Method of the Survey

The first step in the Survey was to discuss its purpose and plan with the Division Superintendent, Superintendent of Shops, General Storekeeper, the General Chairmen of the Shopcrafts and the Division Chairmen of the Clerks with a view to obtaining their cooperation. During the progress of the Survey a letter explaining its purpose and scope, was sent to the following by the Director of the Division of Transport Personnel:

A. Johnston, Grand Chief Engineer, Brotherhood of Locomotive Engineers
D. B. Robertson, President, Brotherhood of Locomotive Firemen & Enginemen
H. W. Fraser, President, Order of Railway Conductors of America
A. F. Whitney, President, Brotherhood of Railroad Trainmen
T. C. Cashen, President, Switchmen's Union of North America
Maurice Franks, President, Railroad Yardmasters of America
Geo. M. Harrison, President, Brotherhood of Railway & Steamship Clerks
E. E. Milliman, President, Brotherhood of Maintenance of Way Employees
V. O. Gardner, President, Order of Railroad Telegraphers
A. E. Lyon, President, Railroad Signalmen of America
B. M. Jewell, President, Railway Employes' Department

Throughout the Survey the investigators were accompanied by a member of the Labor Relations Staff of Railroad "A". The different jobs were observed one by one in each department. The foreman (or chief clerk) of the department concerned accompanied the investigators and answered questions regarding the specific duties entailed in each occupation or job. The general chairman of the appropriate labor organizations in some cases accompanied the investigators and the judgement of both supervisors and general chairmen was sought with regard to the suitability of each job for women.

Following the observation trips, the investigators consulted with one another and checked their own judgment as to suitability of each job for women with that of other experienced persons and with available lists of railroad jobs considered suitable for women on other railroads and by other agencies. The decision as to whether a particular piece of work could be done by the right type of woman was finally determined on the basis of the nature of the work and the physical or other limitations of women, irrespective of restrictions embodied in labor agreements or governmental regulations.

The findings of the Survey were submitted to the Presidents of each of the railway labor organizations listed above and to the Association of American Railroads for their comments. All specific points which were raised have been carefully considered and certain changes have been made in revising the original text of this report.

Findings of the Survey

A. DESCRIPTION OF THE WORK OF THE VARIOUS DEPARTMENTS ON RAILROAD "A" AND THE POSITIONS SUITABLE FOR WOMEN IN EACH

In this report the departments are dealt with in the following order:

I. EXECUTIVE OFFICES

II. GENERAL OFFICES
- Engineering
- Employee Records and Insurance
- Labor Relations
- Accounting
- Traffic
  - (a) Passenger, mail, baggage and express
  - (b) Freight
- Purchases and Stores
- Other General Offices
  - (a) Police
  - (b) Medical
  - (c) Legal and Claims
  - (d) Real estate and Taxes
  - (e) Photography
  - (f) Printing
- Clerical and Service

III. MAINTENANCE OF WAY AND STRUCTURES
- Roadway
  - (a) Section work
  - (b) Repair Shop
- Bridges and Buildings
- Telegraph, Telephone and Signals

IV. MAINTENANCE OF EQUIPMENT AND STORES
- Inspection of Locomotives and Cars
- Motive Power
  - (a) Round House
  - (b) Back Shop
    - Erecting Shop
    - Blacksmith Shop
    - Boiler Shop and Tank Shop
    - Electrical Shop
    - Machine Shop and Tool Room
    - Wheel and Truck Shop
    - Rod and Link Shop
    - Tin and Pipe Shop
    - Pattern Shop
    - Power House

Freight Car
- (a) Freight car yard (rip track)
- (b) Freight car shop

Passenger Car
- (a) Passenger Car Servicing
- (b) Passenger Car Yard
- (c) Passenger Car Shop
  - Body and Paint Shop
  - Electrical Shop
  - Wheel and Truck Shop
  - Pipe and Tin Shop
  - Upholstery, Carpet and Cabinet Shop

Stores
- (a) Storehouse and Storeyard
- (b) Reclamation and Scrap Dock

V. TRANSPORTATION (OTHER THAN TRAIN, ENGINE AND YARD)
- Dispatcher's Office
- Telegraph, Telephone and Towers (Interlocking and Crossing)
- Stations
  - (a) Passenger
  - (b) Freight
- Dining Car Service
- Laundry

VI (a). TRANSPORTATION (YARD MASTERS, SWITCH TENDERS AND HOSTLERS)

VI (b). TRANSPORTATION (TRAIN AND ENGINE SERVICE)

I. EXECUTIVE OFFICES

Executives, Officials and Staff Assistants

Railroad transportation is a specialized technical field, in which experience acquired in outside industries has only a limited value.

The diversified nature of railroad activities and the interdependence of the various departments also recuires for the work of executives and higher supervisory officials, a background of railroad experience not usually possessed by women. For these reasons the positions within this classification which can be filled by women are usually limited to those of executive assistants, dealing more particularly with one specific type of work.

II. GENERAL OFFICES

Professional, Clerical and General Employees

The arrangement of departments varies on different railroads. The following outline agrees in general with the practice on the particular railroad used as a basis for this survey. In the general offices for each department there are clerical positions covering stenographic, secretarial and messenger work, filing, and bookkeeping, which can be handled by women. These will not always be repeated under the individual department headings. It is not a complete list of all departments on all railroads, but includes the principal ones located in the general offices of railroad A.

- Engineering
- Employee Records & Insurance
- Labor Relations
- Accounting
- Traffic
  - Passenger, baggage, mail and express
  - Freight
- Purchases & stores
- Other General Offices
  - Police
  - Medical
  - Legal & Claims
  - Real Estate and Taxes
  - Photography
  - Printing
- Clerical and Service

A detailed study of each of these departments reveals the following facts:

Engineering

This office prepares plans and programs of expenditures for the building and maintaining of railroad facilities, including tracks, bridges and buildings. The principal positions in this department require technical training and experience. Since the training cannot be obtained within a short period and the experience derived from field positions is generally not obtainable, such jobs are not considered suitable for women unless they have already received an engineering education.

There is other work, particularly in the drafting room, however, to which women with adequate technical education are admirably suited.

Positions Suitable for Women:

Designer and detailer
Draftsman
Tracer
Letterer (including map coloring)
Record keeper
Blue print machine operator

Employee Records & Insurance

The Employment and Insurance Department handles personal records of all employees, group insurance and pensions. All of the work in this department is clerical in its nature and is exactly the right kind of work for women.

All positions in this department, except that of superintendent, were handled by women on the railroad studied.

Positions Suitable for Women:

All positions

Labor Relations

This department handles, with railway labor organizations and government agencies, all personnel matters pertaining to seniority rights, working agreements and rates of pay.

Most of the work of this department seems better suited to men than women, because it requires dealing with labor chairmen, all of whom are men. However, women of the right type often make better conciliators than men; and women might be used in connection with this function if the work can be so organized.

Positions Suitable for Women:

All clerical positions

Accounting

The accounting offices deal with freight accounts, overcharge and loss and damage claims, disbursements and pay rolls, passenger accounts and interline ticket rates, car service accounts, fuel accounts, joint facilities accounts, statistics and cost studies.

The machine work for all of these offices can be performed by women on dictaphone, comptometer, and International Business Machines. The mail bureau of the accounting department can also be handled entirely by women. It covers all stencil and hectograph work.

A few of the accounting jobs, such as that of the car repair clerk, require technical knowledge not usually possessed by women. The preparation of interline freight accounts requires much training for the verification of rates and interline divisions. Practically all other work in the accounting offices can be handled by women who are sufficiently trained.

Positions Suitable for Women:

Paymaster
Accountant or Auditor
Clerk
Mechanical device operator
Waybill sorter

Traffic

(a) Passenger, Mail, Baggage and Express Traffic

This office solicits passenger, mail and express business and is responsible for maintaining standards of service which will attract and hold patronage.

Much of the work covered by this department is suitable for women. The work of passenger rate clerks requires considerable experience but can be handled by women if sufficiently trained. Part though not all, of the passenger traffic representatives contacting the public may be women.

Women can be depot passenger agents, whose duties include stocking trains at terminals with stationery and literature, inspecting the condition and servicing of passenger cars on outgoing trains, assisting passengers in transferring between trains or stations, changing tickets and looking after invalids, old persons and children.

With adequate training women make good ticket sellers, and have been found particularly fitted for small offices in hotels, stores and other city locations.

Women can handle the work of the advertising department, particularly when the general advertising program is planned by a committee of officials and the detailed copy writing is assigned to an outside advertising agency.

Women are not so well suited for jobs as baggagemen because of the necessity for handling heavy bags on trains in a very limited time.

Positions Suitable for Women:

Depot passenger agent
Passenger traffic representative
Rate clerk (senior and junior)
Ticket seller
Information clerk
Reservations supervisor
Reservations clerk
Mail distributor (company mail room)
Copy writer (advertising department)

(b) Freight Traffic

The work of the freight traffic department includes soliciting freight business, preparing freight tariffs, quoting rates and handling divisions of revenue. These positions require much training and experience, but can be handled by anyone sufficiently trained whether man or woman.

Since freight traffic representatives contact managers of industries and attend meetings with representatives of other transportation agencies, most of whom are men, this work is probably not as well suited to women as that of the passenger department.

Positions Suitable for Women:

Rate clerk (senior and junior)
Tariff clerk (senior and junior)
All other clerks

Purchases and Stores

This office handles supervisory office work for the stores department, including shop orders, and makes all outside purchases of company material and sales of scrap or other material. Fuel and stationery are handled in separate departments similarly organized.

The work involves determining priorities, placing orders in accordance with company standards, tracing and hurrying shipments, checking prices on invoices. Men are probably better suited for the jobs of lumber and fuel buyer and for that of file clerk which requires familiarity with the great diversity of articles to be purchased, many of a technical nature.

Positions Suitable for Women:

Assistant priority director
Assistant order clerk
Order writer
Requisition clerk
Invoice clerk
Hurry clerk
Assistant hurry clerk
Assistant purchase invoice clerk
Assistant statement clerk

Other General Offices

(a) Police

The duty of this department is to protect company property, goods and passengers in transit and in stations, and to maintain order on the railroad property.

Positions Suitable for Women:

Patrolmen (in suitable locations and preferably in daylight hours.)
Watchmen (in suitable locations and preferably in daylight hours.)
Guard (in suitable locations and preferably in daylight hours.)
Detective

(b) Medical

This department is responsible for the required periodic medical examinations of employees, for examination and treatment of injured persons and testimony in court when necessary, and also for maintenance and supervision of first aid stations at various points on the railroad.

Positions Suitable for Women:

Laboratory assistant
First aid attendant
Nurse

(c) Legal and Claims

The duty of the legal department is to advise company officials on all matters of law and government regulation, to prepare briefs and argue cases in court, and before government tribunals, and to transact all other necessary legal business, including the handling of taxes and claims.

Positions Suitable for Women:

Attorney
Legal assistant
Librarian

(d) Real Estate and Taxes

This department represents the railroad in the purchase, sale or leasing of real estate; compiles information regarding land and real estate values for taxation purposes; examines and arranges for adjustments of assessments and other property taxes; and performs other related work.

Positions Suitable for Women:

Real estate agent
Tax agent

(e) Photography

Some railroads maintain a department for the making of photographs and prints needed to illustrate reports and for publicity purposes.

Positions Suitable for Women:

Photographer
Photographer helper

(f) Printing

The printing of railroad timetables, circulars, letterheads, forms, advertising leaflets, and employee literature may be handled by contract with an outside agency or in a company-owned print shop. In such a shop all jobs except those involving heavy manual labor can be handled by women.

Positions Suitable for Women:

Printer
Printer helper

Clerical and Service

Almost every department involves some general clerical and service work. In some cases this is done within the department and in others by special bureaus.

Positions Suitable for Women:

Claim agent and investigator
Clerk (general)
Secretary, Stenographer and Typist
Mechanical device operator
Storekeeper and tool room attendant
Telephone switchboard operator (PBX)
Elevator operator
Motor vehicle operator
Matron
Messenger
Janitor, cleaner, sweeper

III. MAINTENANCE OF WAY AND STRUCTURES

As indicated by the name, the duty of this department is to maintain the railroad track, right of way, bridges and buildings in good working condition.

Roadway

(a) Section Work

Heavy track work, involving renewals of ties and rails, is done by extra section gangs, usually housed in camp cars and moved from one site to another as the work progresses. Because of these housing conditions and the weight of the material handled, women cannot be used efficiently for heavy track work.

The lighter track work is performed by regular section gangs, assigned to definite sections of track. Women can be used for much of this lighter track work, particularly in situations where they can return home at night. They can handle practically all the track work required in freight yards and on side tracks and on main lines can be used in mixed gangs to assist in dressing track.

Work Suitable for Women:

Section man
- Cleaning trash from right of way
- Destroying weeds and grass
- Cleaning debris from ditches and culverts
- Levelling eroded spots in slopes
- Cleaning and oiling frogs and switches
- De-icing switches
- Removing snow
- Tightening track bolts and spikes
- Cleaning and filling oil switch lamps
- Cleaning lenses of electric lamps
- Cleaning and edging ballast
- Packing ballast
- Levelling piles of dirt thrown up by a mole

Section flagman

(b) Repair Shop

The Maintenance of Way Repair Shop is occupied chiefly with the work of reclaiming rail, frogs and switches. Used rails are straightened in a hydraulic press, the battered ends cut off and new holes drilled for the attachment of angle bars. In much of this work women can be of assistance.

Work Suitable for Women:

Welder (acetylene)
- building up frogs and welding composite angle bars for different sizes of rail

Machinist or helper (depending upon the terms of the agreement)
- operating hydraulic rail press
- operating power roller (forcing rail into cutter)
- operating radiograph
- cropping ends of rail with semi-automatic oxyacetylene torch machine
- operating twin chuck horizontal drill
- drilling holes in cropped rail, if power roller is used

finishing rail ends (smoothing cropped ends of rail using portable pneumatic grinder, preferably suspended by a spring)

Laborer
measuring, marking center, recording and sorting reclaimed rail according to length

Bridges and Buildings

Bridge and building gangs install, repair and alter structures along the railroad lines as instructed by the company's engineers. Women, as helpers of skilled trades workers, can assist in much of this work.

Work Suitable for Women:
(if they can return home at night)

Painter
scraping and painting bridges or buildings
Sign painter (signs, signposts, crossing gates, etc.)
Painter helper
Carpenter helper
Iron worker helper
heating rivets
Plumber helper
Electrician helper
Laborer
working in concrete and cement

Telegraph, Telephone and Signals

The duties of this department are to construct and maintain automatic block signals, interlocking plants, and the equipment of telegraph and telephone systems.

The work of installing telephone, telegraph and signal equipment out on the line does not seem suitable for women. In the repair shops, however, where company telephones, clocks and relay instruments are repaired women can be used in a number of occupations.

Work Suitable for Women:

Signal maintainer helper
dismantling, cleaning, adjusting and reassembling signals and telegraph relays

soldering
coil winding
filling transformer boxes with asphalt

Telephone repairman helper
dismantling and reassembling
company telephones
varnishing and enamelling metal parts
rewiring to diagrams
packing and unpacking shipments

Clock repairman helper

IV. MAINTENANCE OF EQUIPMENT AND STORES

Inspection of Locomotives and Cars

Locomotives are inspected in the round house after every run. Freight cars are inspected for defects at interchange tracks, at receiving and classification yards, at industry yards, and at forwarding or departure yards. All of this work is technical and requires much experience.

As freight trains pull into the receiving yards before classification, inspectors in pairs, one on each side of the train, watch the cars as they roll by and listen for the pounding of flat wheels or rattling of loose parts. After the train has stopped, a thorough inspection is made beneath and above the cars to check the wheels, journal boxes and lubrication, the running gear, the draft gear, the brake rigging and hand brakes, the air brakes, the coupling, the grab-irons or handholds on sides, ends and top. In a hump yard, the wheels and journal boxes are inspected and oil added where needed as the train moves slowly up to the hump. The inspection of parts beneath the cars is made from a pit between the rails. Inspection work of the first kind does not seem suitable for women because it involves climbing on and under cars. Inspection from a pit might be done by a woman, if she can be taught to recognize defects quickly enough.

Passenger cars are inspected in the coach yards at terminals and also at large passenger stations along the line, where particular attention is given to the journal boxes, and oil or additional packing is added as needed. Women can re-pack the journal boxes and insert oil.

Air brakes are tested every time a train is cut to make sure that in recoupling the air line is properly coupled up, and that the air brakes are working for the length of the train. This sometimes involves working between cars and does not seem suitable for women, who are generally less agile than men.

Positions Suitable for Women:

Carman (inspector)
- inspecting freight car trucks (in hump yard pit)
- inspecting and packing journal boxes

Motive Power

(a) Round House

In the round house, locomotives are cleaned, serviced, given such minor repairs as may be necessary, and prepared for the next run. Hostlers from the round house move locomotives to and from the outside tracks. Diesel locomotives are usually serviced in a special section of the enginehouse.

Work Suitable for Women:

Clerk
- dispatching engines and crews
- call boy (if by telephone)
- general

Water tester

Welder (portable electric equipment)

Machinist or helper (depending on the terms of the agreement)
- lubricating engine motion work
- packing valves - steam, air and water
- operating drill press
- filling grease cups
- alemiting
- packing driving and truck boxes
- cleaning air brake equipment

Boilermaker or helper (depending on the terms of the agreement)
- boring and cleaning flues

Electrician or helper (depending on the terms of the agreement)
- operating portable crane
- cleaning head lamps

Hostler (inside)

Hostler helper (outside)

Laborer
- operating turntable
- operating chore-boy truck
- blocking front ends and fire boxes
- polishing front ends

boring and cleaning flues
making grease cakes
cleaning locomotives, underframe and truck with steam pressure apparatus
cleaning Diesel locomotives inside and outside
wiping locomotive jackets, cabs, and cab windows
washing tanks
emptying and cleaning fire boxes
building fires
drying sand and filling sand boxes
cleaning cinder pits
supplying locomotive tool equipment
tending store room
watching engines

(b) Back Shop

In the back shop locomotives are given heavy classified repairs as distinguished from the light running repairs handled in the round house shop. The work in the back shop is divided among a number of separate shops or gangs, as follows:

Erecting Shop
Blacksmith Shop
Boiler Shop and Tank Shop
Electrical Shop
Machine Shop and Tool Room
Wheel and Truck Shop
Rod and Link Shop
Tin and Pipe Shop
Pattern Shop
Power House

In accordance with union agreements the workers in these groups are classified as machinists, boilermakers, blacksmiths, sheet metal workers, electricians, carmen, helpers and laborers. There are subordinate classifications of helpers and apprentices in each trade.

Erecting Shop

In the erecting shop, locomotives are stripped in varying degrees according to the class of repairs called for. The various parts are sent to the shops where they are to be handled, while work is being done in the main shop on the frame with cylinders and valve chests still attached. After all the parts are repaired or renewed as called for, they are reassembled on the frame and the locomotive is made ready to leave the shop.

Work Suitable for Women:

Welder (electric & oxyacetylene)
on light work
Electrician or helper (depending on the terms of the agreement)
operating overhead crane
operating motor
turning motor on and off for mechanic
squaring valves in driving wheels
Machinist or helper (depending on the terms of the agreement)
helping to erect fittings and grab handles on boilers and cabs
operating portable grinder
super heater pipes and headers
steam pipe joints
operating bolt lathe
operating planer
shoe and wedge work, if set up by a man
operating portable miller
squaring drive pedestals for roller bearings
alemiting engine rods and motion work
Carman helper
installing cab curtains
Laborer
cleaning, sweeping and odd jobs

Blacksmith Shop

The work in this shop consists largely of welding, forging, shaping, bending, tempering and hardening metal parts of locomotives and cars; dressing tools and repairing springs. Most of this work is too heavy for women though there are a few lighter jobs upon which women can be used.

Work Suitable for Women:

Welder (electric and oxyacetylene)
light material
Blacksmith or helper (depending on the terms of the agreement)
operating steam hammer up to 1500 lbs.
forging small tools and other light material
operating forging machine
bolt heads

operating pneumatic hammer
light work
operating bolt threading machine
operating machine cutter
iron bars

Boiler Shop and Tank Shop

The work of this shop includes laying out, building and repairing boilers, tanks and drums and other sheet metal work. Most of this work is too heavy for women.

Work Suitable for Women:

Welder (electric and oxyacetylene)
Carman or helper (depending on the terms of the agreement)
scraping and washing tanks
fitting and grinding valves
spray painting tanks
painting cabs
applying fittings to cabs
installing tank hose
Electrician or helper (depending on the terms of the agreement)
operating overhead crane
Boilermaker or helper (depending on the terms of the agreement)
operating punch press
if lever is adjusted to avoid high reaching
operating drill press
operating spindle drill
operating radial drill
operating bolt cutter
rivet heating
fitting and applying small rivets
fitting bolts and tightening nuts on tanks and boilers
drilling tell tale holes
removing staybolt
staybolt tapping
re-setting flues
attending tool room
Laborer
sweeping and cleaning

Electrical Shop

The work of the electrical back shop consists mainly of the repair of heavy traction motors, including those for Diesel locomotives. Very few small motors are handled here. The work requires the dismantling, cleaning and reassembling of motors of 250 to 300 HP. Many of the parts are heavy and hard to handle. There is a great variety in the types of motors. Out of some 2,000 motors handled in the shop surveyed there were estimated to be about 1,200 different kinds. Therefore, a considerable number of skilled and experienced workers will always be necessary. However, if the work is divided up there are certain lighter operations to be performed on most motors which women might be trained to do.

Work Suitable for Women:

Electrician or helper (depending on the terms of the agreement)
- buffing and cleaning small and medium parts of motors
- cleaning parts with small portable buffer
- spraying field coils
- removing insulation between clips of commutators
- cleaning and repacking insulation
- cleaning laminations of armatures
- winding small armatures
- overhauling generators
- washing filters in air conditioning units
- attending tool room

Laborer
- cleaning and sweeping

Machine Shop and Tool Room

In the machine shop, work is done not only for the local back shop, but also in filling shop orders sent in from all parts of the railroad. In the tool room the work consists of making and repairing all company tools, including the maintenance of all the heavy machine tools used in the back shop, repairing pneumatic hand tools, and repairing valves, such as safety pop valves, feed valves, signal valves and pump valves.

Although many of the positions in the machine shop, and especially in the tool room, require technical knowledge and mechanical skill, involving working to very fine tolerances, a large number of these jobs can be adapted so that women with intelligence and alertness can handle them satisfactorily after

a period of training. Women have considerable dexterity with their hands and learn quickly to operate the smaller machines with speed and precision, particularly when only one kind of operation is involved.

When the material to be handled is heavy, women can be assisted by mechanical devices such as hoists and cranes, portable or power rollers. Sometimes the positions of levers on machines can be changed so that less reaching is required, and additional leverage obtained to reduce the pull necessary to operate the machine. Height of machines can be adjusted for smaller workers by the use of platforms, and often a seat will make the work less arduous without impairing the efficiency of the operator.

Some of the heavier portable power drills and grinders are not suitable for women. Even if they have the physical strength to handle the tool when it is running smoothly, there is danger of a kick-back when it hits an obstruction which may force the tool from their grasp and cause an accident. In some cases the handles of tools may need to be reduced in size to conform to women's smaller hands.

In certain cases where the material to be handled is light or can be lifted by crane or hoist, women can be taught to set up their own work on simpler jobs. In certain cases where the time required to set up the job is short in comparison with the time required for completing it, a trained man may set up the work and a woman be left to tend or operate the machine. This can be done to advantage where there are a sufficient number of such jobs to keep a man occupied in setting them up.

Work Suitable for Women:
(on the machines in the shop surveyed)

Welder (electric)
Machinist or helper (depending upon the terms of the agreement)
operating milling machine, #3 Cincinnati
small and large gear cutting
operating shaper, 26", Gould and Eberhardt
all types of small work
operating radial drill press, 6', American Tool Company
operating Doall metal saw, 26", Doall Company
operating turret lathe #2, Warner and Swasey
turning small bolts and pins
operating tool grinder, 1½", Cincinnati
grinding large and small tools

operating Kwick-way grinder
valve grinding
operating Marvel high Speed saw
making metal bushings
operating other lathes, planers, millers, drill presses, grinders, saws and bolt threaders, when the material is not too heavy, on such operations as: thread cutting, die grinding, jig boring.
inspection of cracks
measurement of small parts
dismantling, testing, lapping, filing and seating valves, including signal, feed, brake, distributor, triple, safety pop, airbrake equipment, pump governors, and bell ringers
attending tool room
Electrician or helper (depending on the terms of the agreement)
operating overhead crane
Laborer
cleaning and sweeping

Wheel and Truck Shop

This shop is responsible for the repair of locomotive driving wheels and trailer wheels, engine trucks, tender wheels and steel car wheels. The work involved is principally heavy, such as removing wheels from axles and rims and remounting them, turning tires, finishing axles, planing crossheads, turning and fitting brasses, boring cylinder castings and other heavy parts, but there is some lighter work, which women can do.

Work Suitable for Women:

Welder (electric)
adding metal to driving boxes, if lifted by air hoist or overhead crane
Welder (acetylene)
welding miscellaneous small parts
Machinist or helper (depending on the terms of the agreement)
operating small wheel lathe
turning tires of trailer, engine truck, tender and steel car wheels, if a man sets up the job
operating boring mill, 52" Gisholt

making cylinder packing rings, if a man sets up the job
operating lathe
finishing packing parts
operating small shaper (if trained to set up the job)
Electrician or helper (depending upon the terms of the agreement)
operating overhead crane
Laborer
cleaning and sweeping

Rod and Link Shop

The rod and link gang repairs driving rods and side rods of locomotives and the various parts of the motion work. The main rods are large and too heavy for women to handle, but there is much work which women can do on lighter parts, such as small rods, bushings, pins, cranks, yokes, bars and union links.

Work Suitable for Women:

Welder (electric and oxyacetylene)
welding small parts
Machinist or helper (depending on the terms of the agreement)
operating drill press
small or medium work
operating table drill
operating small engine lathe
working on bushings and pins, valve and reach rods, eccentric rods, combination levers, radius bars, bell cranks, reversing yokes and union links
operating small turret lathe
working on bolts and pins
operating metal saw, 15" blade
operating straight grinder
light work
operating heel grinder
light work
operating shaper 14" stroke (with help for lifting heavy work)

Tin and Pipe Shop

The work in the tin and pipe shop is handled by sheet metal workers and pipe fitters. It covers a great variety of

jobs, such as renewing the lagging on locomotive boilers, cutting and rolling boiler jackets, bending, threading and welding pipes. The tinners also make wash tubs and buckets, and place metal linings in boxes. Women can do the lighter pipe threading and welding and serve as helpers on the heavier work.

Work Suitable for Women:

Welder (electric and oxyacetylene)
welding pipe joints
Sheet metal worker or helper (depending on the terms of the agreement)
working on boiler jackets
operating pipe threading machine (if pipes are carried by men and if a shelf is placed on the machine)
soldering and leading (if enough work of this type)
stripping and replacing boiler lagging
Laborer
cleaning and sweeping

Pattern Shop

The railroad used as a basis for this survey has no foundry and obtains its castings from an outside contractor. There was less work to be done in its pattern shop than on most railroads. However, when there is enough work, women can assist.

Work Suitable for Women:

Pattern maker helper
sanding and shellacking patterns
Laborer
attending store room
cleaning and sweeping

Power House

The power house furnishes steam for heating the shop buildings, pressure steam for washing locomotive trucks and wheels at the wash pit, and power for all the hydraulic machines in the shops. Even when the boilers have automatic coal stokers, the job of fireman could hardly be handled by a woman because of the weight of the long bar used in breaking up clinkers. Women could work in the engine room, oiling and cleaning engines and polishing brass.

Work Suitable for Women:

Laborer
cleaning engines
sweeping, scrubbing, and polishing

Freight Car

Freight cars requiring only very light repairs may be put in condition while still in trains in the freight or classification yards; those requiring more attention than can be given in such a limited time are cut out of the trains and sent to the repair tracks (rip tracks) in the freight yard; those needing still heavier or classified repairs are sent to the freight car shops.

(a) Freight Car Yard (Rip Track)

In the freight car yard there is a certain amount of office work in keeping records of the car repairs, writing bills covering these repairs, and handling time cards. These records are very important because of the necessity of billing foreign roads for work done on their cars in transit.

On the receiving tracks of the repair yard, inspectors again examine each car, noting the defects already listed in the first inspection and sending the car to the proper track for its class of repairs.

In the work of dismantling cars, cutting the steel body frames with acetylene torches is too heavy for women. Elsewhere in the repair yard, in the airbrake shop, and the storehouse there are, however, a few jobs which women can do.

Work Suitable for Women:

Clerk
Carman or helper (depending on the terms of the agreement)
repairing triple valves
spray painting
stenciling
packing journal boxes
Laborer
attending store room
cleaning and sweeping

(b) Freight Car Shop

The freight car shop is equipped both to repair and build freight cars. In the railroad shops visited only repair work was in progress, but the rebuilding necessary was in many cases almost as heavy as building a new car since it involved making many new parts.

In the body shop some metal parts are cut out with acetylene torches, while other parts are removed for cleaning and for straightening in a large bulldozer machine after heating. Most of this work is too heavy for women, including the use of the heavy shearing machine and reamer. However, women can assist the carman with work on wood cars and on lighter metal cars such as cabooses. Even in the blacksmith and truck shops there are a few jobs suitable for women.

Work Suitable for Women:

- Body shop
  - Acetylene cutter
  - Welder (acetylene)
  - Carman or helper (depending on the terms of the agreement)
    - heating and bucking rivets (car body not truck)
    - nailing interior woodwork
    - fitting and bolting floor planks
    - attending tool room
  - Electrician or helper (depending on the terms of the agreement)
    - operating portable crane
    - operating overhead travelling crane
  - Laborer
    - filling bins with rivets and small parts
    - cleaning and sweeping
- Woodworking mill
  - Laborer
    - removing nails and trimming old lumber
    - tailing from power saws with roller when necessary (if not contrary to state laws)
- Blacksmith Shop
  - Blacksmith or helper (depending on the terms of the agreement)
    - operating light metal power shears
    - operating heater furnace
      - working on small parts
- Truck shop
  - Welder (acetylene)
    - light work
  - Acetylene cutter
    - light work

Body and Paint Shop

In the main shop, or body shop, car furnishings are removed, sent to the appropriate sections to be renovated, and then returned to the reconditioned car. While this work is being done, the car body itself is repaired and painted inside and outside.

Work Suitable for Women:

Welder (electric and acetylene)
light work
Carman or helper (depending on the terms of the agreement)
riveting and bucking rivets
light work
assisting with general repairs
heating rivets
repairing steam and air hose
removing paint from outside of cars
spray painting
scraping paint from glass
packing journal boxes
Laborer
removing and installing car furnishings
cleaning and sweeping

Electrical Shop

In the electrical back shop repairs are made to the generators, regulators, batteries and other car lighting and air conditioning equipment, and the electric brake equipment of streamlined trains. The work consists of cleaning, repacking and winding 32-volt car lighting armatures, breaking down and completely overhauling generators, adjusting regulators, washing and recharging storage batteries some of which weigh as much as 800 pounds.

The storeroom for electrical supplies in this shop did not have a stock attendant, although there may be such a position on some railroads.

Much of the work in this shop is highly skilled and heavy, but a few jobs can be performed by women.

Work Suitable for Women:

Electrician or helper (depending on the terms of the agreement)

overhauling generators
light work only
winding armatures (3-20 KW)
cleaning and repacking insulation
washing and oiling filters in air conditioning system (if removed from cars by men)
assisting with rewiring of cars

Laborer
assisting in cleaning batteries
attending storeroom

Wheel and Truck Shop

In the truck and wheel shop the work is generally very heavy. Trucks are completely overhauled, springs repaired or renewed, wheels bored and wheel tires turned. The work on roller bearings requires skilled mechanics.

Work Suitable for Women:

Machinist
operating wheel lathe (with help of an air hoist and another person to roll and hoist)

Laborer
cleaning and sweeping

Pipe and Tin Shop

In the pipe and tin shop work is done on metallic steam hose connections, also bending, shaping and soldering tin. Much of the work is light enough for women's physical limitations and calls only for skill and training. The tinsmiths make water tanks, line ice boxes, and install the interior finish in dining car kitchens. The pipefitters thread, bend and install pipes and buff out metallic steam hose connections.

Work Suitable for Women:

Sheet metal worker or helper (depending on the terms of the agreement)
cutting light metal with a hand power circle cutter
bending, shaping and soldering light metal for water tanks, ice box linings and interior finish of dining car kitchens.
buffing out metallic steam hose connections
threading pipe
recovering pipes under the cars

Upholstery, Carpet and Cabinet Shop

In the upholstery shop, coach seats, lounge and dining car chairs are cleaned and the upholstery renewed or redyed as necessary. Rattan seats are cleaned, bleached, stored in a steam room for drying, then varnished and dried again. New carpets are sewed by hand in the carpet shop and pieces set in to repair worn ones.

In the cabinet shop the frames of seats, chairs and other furniture are repaired or made new. The shop is equipped with power saws and drills and a morticing machine.

In the upholstery shop are also handled the miscellaneous jobs of painting window frames, sanding, staining and varnishing chair frames, washing lamp globes, and painting and stenciling signs.

Work Suitable for Women:

Carman (upholsterer) or helper (depending on the terms of the agreement)
- upholstering car seats and furniture
- operating power sewing machine
- making locomotive cab curtains, caboose cushions, window blinds, head rest covers, draperies and stitching seat upholstery
- patching upholstery by hand
- repairing mechanical parts of seats
- sewing carpets by hand

Carman (cabinetmaker) or helper (depending on the terms of the agreement)
- making and repairing wood frames of seats and furniture
- operating power saw
- operating morticing machine
- operating drill

Carman (painter) or helper (depending on the terms of the agreement)
- painting window sash
- installing window sash
- removing varnish, sanding, staining and varnishing chair frames
- hand painting and stenciling signs
- washing lamp shades and scraping glass

Stores

(a) Storehouse and Platform

In the general storehouse and platform are kept the material and supplies needed for the entire railroad. These materials are requisitioned from the purchasing department which orders them either from outside companies or has them made in the company's own shops.

The storehouse office force handles priorities, writes orders in accordance with company specifications, issues shipping instructions, follows up the orders, hurries shipments when it is necessary, maintains records of orders and stocks, records of credits for material returned for scrap or reclamation, makes reclamation statements, and payroll statements.

In the storehouse materials are stocked in sections, each handling material and supplies of a certain class. Each section is supervised by a stockman who is assisted by material handlers. The material handlers store the materials in the proper places and fill orders. The stockman is responsible for keeping a constant supply of materials on hand. Some of the materials are stored in the outside yard. Materials are carried in hand trucks or in small electric trucks to and from various sections of the storehouse and yard. Truckers are also needed to unload and load the freight cars at the storehouse platform, and haul the material to the proper locations. These gangs also include material checkers. Heavy materials are unloaded and loaded in the yards by cranes and hoists of various kinds.

Work Suitable for Women:

Stockman (all sections)
Stocktaker
Stockbook clerk
Material handler, storeroom (if men and women are used together in numbers proportionate to the weight of the material, except locomotive parts and oil containers)
Trucker (if there is one man or more in the gang)
loading and unloading cars with stores at the platform
Checker
checking truck loads with bills of lading
Laborer
piling light bar iron with crane
loading and unloading timber with suitable roller
loading and unloading light iron parts such as tie plates

sorting light iron parts such as the plates and angle bars
piling angle bars, rail braces and transit clips weighing up to 100 lbs by dragging

(b) Reclamation and Scrap Dock

In the reclamation section of the store yard used material, sent in from all sections of the railroad, is unloaded and that which is in usable condition is sorted and distributed in the store house yard. That which can be repaired and used again by the company is sent to the reclamation shed or yard, and that which cannot be used further is prepared for sale as scrap.

The scrap is sorted according to the nature of the metal or alloy, and large pieces are cut with acetylene torches into suitable lengths for handling in cars and as desired by the steel mills for charging the furnaces. Much of the work of this department centers around the sorting of the material to be reclaimed. A special fabricating division cuts the metal frames of freight cars and welds them into light trusses for building work.

In the reclamation shed spikes, bolts, rail anchors and tie plates are straightened, threads on bolts and nuts are cleaned and oiled, and small metal parts are cleaned and welded. Cement is reclaimed from emptied sacks, paper and burlap bags are baled in a compression machine, zinc is reclaimed from flashlight batteries, and greasy tinware and paint buckets are cleaned in a vat of caustic soda. Journal box lids are repaired, sections of good hose reclaimed from used hose and tested, tinware and lamps are cleaned and repaired by soldering or welding.

Scrap dock foremen check and weigh incoming and outgoing shipments of scrap and lumber, and make switch lists for the crew switching the cars at night.

Work Suitable for Women:

Welder (electric and oxyacetylene)
Acetylene cutter
cutting scrap metal
Electrician or helper (depending on the terms of the agreement)
operating crane (gantry, box type)
lifting heavy iron material
Craneman
operating portable steam crane
operating portable gas crane

Laborer
operating hydraulic press
straightening rail anchors, cold
operating air compressor
reclaiming zinc from batteries
operating wire brush machine
cleaning track bolts and nuts, also sorting and oiling by hand
operating nut tapping machine
operating tumbler
cleaning cement sacks and small metal parts
operating baling machine (scrap paper, burlap and rubber)
straightening spikes with hand or power hammer
unloading box cars and classifying scrap metal
cleaning used tinware in caustic solution

V. TRANSPORTATION (OTHER THAN TRAIN, ENGINE AND YARD)

Dispatcher's Office

The position of train dispatcher is one of great responsibility and requires long training and experience, which no new employee, either man or woman, could be expected to have. However, in positions in which the traffic is light responsible women may be trained to handle the dispatcher's work or C.T.C. operations.

Positions Suitable for Women:

Dispatcher (where traffic is light)
C.T.C. operator (where traffic is light)

Telegraph, Telephone and Towers (Interlocking and Crossing)

Messages between dispatchers' offices and between the dispatcher's office and the local stations are transmitted by telephone, telegraph or printer teletype machine. Women can be trained to send and receive these messages. These are responsible positions requiring some knowledge of operating rules as well as skill and accuracy in operating the machines.

The work on the printer machines is often difficult because it involves the transmitting of accurately spaced material for forms as well as plain text. The teletype machines in the office surveyed were operated at the high speed of 60 words a minute, and some of the best operators were women. In small offices out on line a teletype operator must also be able to transmit and receive by Morse in case of failure of the printing machine.

The signals and switches for the yard tracks of large passenger stations are controlled by interlocking towers, usually manned by two men. One is the telephone clerk who keeps the record of train movements as seen from the tower windows and as announced by telephone or a loud speaker. The other is the towerman or leverman, who observes train movements through lights moving on an illuminated diagram of the station tracks, and sets the combination levers for signals and switches accordingly.

There is usually no physical strain in handling the levers, since the signals and switches are electrically operated, but in the tower of a large station there are many combinations for the large number of tracks, and it takes a long time to learn them so that they can be handled quickly without delay to train movements.

Grade crossings for a number of consecutive streets are sometimes controlled by a single person who operates the crossing gates from a central tower. In these cases the operator is known as a crossing flagman.

Positions Suitable for Women:

Telephoner
Telegrapher
Teletype operator (printer machine)
Towerman or leverman-interlocking tower
(if traffic is light)
Telephone clerk (interlocking tower)
Crossing flagman
Crossing watchman

Stations

(a) Passenger

Large passenger stations have many departments, such as the ticket offices, baggage and parcel checking rooms, mail and express departments and the office of the station master. In smaller stations the duties are often combined which may make it more difficult for a woman to handle the work, as for example, when the ticket seller is also required to handle baggage, mail and express.

Positions Suitable for Women:

Ticket agent (small stations with assistants for handling baggage, mail and express)
Ticket seller
Information clerk
Accountant clerk

Stock clerk
Cashier
Baggage checkman (if counter is low and with assistance of a man when necessary)
Parcel checkman (if counter is low and with assistance of a man when necessary)
Mail and package sorter
Mail handler helper (assisting with loading and unloading mail)
Tractor driver (electric)
hauling mail or baggage from receiving platform to trainside
Operator baggage elevator
Operator passenger elevator
Train announcer
Gateman (ticket examiner)
Red Cap porter (if using baggage truck and with assistance of male train attendants)
Matron
Cleaner

(b) Freight

The work in a small freight station involves daily checking of cars in the yard, supervising the icing of refrigerator cars, handling l.c.l. freight at the station platform, and much inside clerical work, some of which is combined with outside jobs. For example the work of the claim clerk sometimes involves climbing on the top of cars to check the icing of those carrying perishable shipments, and in such cases the work is not suitable for women.

The work at the transfer shed of a large freight house is concerned with the handling of less-than-carload freight both inbound and outbound. This involves receiving freight from incoming trucks or freight cars, handling it by platform truck to its destination in the freight shed or in outgoing cars, checking, weighing, billing, marking and stowing it.

Positions Suitable for Women:

Cashier
Rate clerk
Bill clerk
Pick-up and delivery clerk
Yard clerk (in small yards where traffic is light)
Claim clerk (if climbing and heavy lifting are not involved)
Trucker (if working in gang with men to do heavy lifting)
Checker

Dining Car Service

Work in dining cars is complicated by the motion of the train which makes it difficult for cooks and waiters to keep their balance. The problem of housing dining car crews makes it unwise to use women on any but short runs. The sale of food and pillows is usually a function of the dining car department. The work also requires planning menus and inspecting the service.

Purchasing and storing of dining car supplies, including food, chinaware, kitchenware, table silver and linens, and stocking the dining cars is performed by the commissary department.

Work Suitable for Women:

- Dietician
- Dining car inspector
- Steward (if waiters are women)
- Assistant commissary storekeeper
- Commissary clerk
- Pantry woman (if diner has a separate pantry)
- Waitress (on dining cars on short runs with bus boys)
- Lunch counter attendant
  - preparing and selling food
- Coach waiter
  - selling food and pillows

Laundry

The railroad laundry washes, irons, and mends all the company linen, including dining car table cloths and napkins and head rest covers for coach seats. The sewing section also makes new head rest covers.

Work Suitable for Women:

- Laundry helper
  - counting, marking, sorting and packing
  - attending drying room
  - hand and machine ironing
  - assisting washing machine operator
  - operating mangle
- Seamstress
  - mending linens
  - making head rest covers

VI (a). TRANSPORTATION (YARD MASTERS, SWITCH TENDERS AND HOSTLERS)

Freight trains are broken up in classification yards and the cars are reassembled on parallel tracks to make up the outgoing trains. Passenger cars are switched in coach yards and sometimes at the stations of large terminals.

Classification yards may be laid out for either hump or flat switching. In hump yards the cars may be slowed down automatically by car retarders controlled by operators located in towers along the down grade to the "ladder". If there are no car retarders, each car or group of cars is controlled by a yard brakeman who rides it to its position on the classification tracks and slows it by the hand brake. There seem to be few jobs in a hump yard which can be handled by women, except where they may serve on daytime shifts as car retarder operators or as switch tenders for switches close together that do not involve much crossing of busy tracks. In flat switch yards cars are assembled on the proper tracks by yard engines.

All freight switching operations are controlled from yard offices. The work includes assigning and calling crews and keeping records of cars and waybills.

Work Suitable for Women:

Crew clerk
Waybill clerk
Car clerk
Yard clerk (if in daytime)
Teletype operator (printer machine)
Janitor
Switch tender
Car retarder operator

VI (b). TRANSPORTATION (TRAIN AND ENGINE SERVICE)

Train crews who operate the freight and passenger trains over the lines of the railroad system are known as road crews, those who handle trains in switch and station yards are yard crews. Positions on these operating crews are those of engineer, fireman, conductor, trainman, flagman or brakeman, according to the type of train. On certain passenger trains there will be a baggageman and train or coach porter.

Work Suitable for Women:

Ticket collector
Road brakeman (passenger, on suburban and short runs)
Yard brakeman (in flat switching yards)

Engineer (Diesel switch engine)
Fireman (Diesel switch engine)
Coach porter

B. GENERAL OBSERVATIONS REGARDING EMPLOYMENT OF WOMEN ON STEAM RAILROADS

I. Before employing many women for jobs customarily performed by men, a survey of all the work done in every department of the railroad should be made by someone who is not directly responsible for the work being surveyed.

The object of the survey would be to analyze the work with a view to breaking down occupations into simpler jobs or processes, reorganizing the work where necessary in order to adapt the jobs to the capabilities of women by making adjustments in machines or working arrangements which will enable a woman to perform the job without undue physical strain or without violating State laws, and shifting those male employees who are not subject to military service into jobs which it is decided only a man can do.

II. Before women are employed to take the places of men, the cooperation of both the foremen and the men working in each department should be obtained. If the men are organized this should be accomplished through cooperation with the local union representatives.

III. As soon as a list of jobs suitable for women has been completed an estimate of the number of women required to fill these jobs should be made and specifications with regard to the qualifications for the different jobs should be drawn up.

Instead of depending exclusively upon applications "at the gate" or transfer of women already employed by the company, a recruiting campaign should then be inaugurated in order to insure obtaining the right women for each job. Following are some of the recruiting methods which may be used:

a. Ask present employees (male and female) to tell their relatives and friends about job opportunities. Man and wife often make a good working team and this may help to prevent the development of social problems.

b. Place orders for female help with the Railroad Retirement Board employment office or the local United States Employment Service giving information regarding the number and types of women required.

c. Transfer employees temporarily from one division to another as the work requires.

d. Promote or transfer present employees to the more skilled jobs, but only those who are suitable for the particular work to be done.

e. Wherever possible develop the work of the company in outlying communities where there is no man or womanpower shortage and shift work from other places to these points where possible.

f. Make it possible for the married women of the community to work by arranging for part-time employment in as many jobs as possible. A surprisingly large number of jobs can be adapted to part-time workers.

g. In cases of extreme shortage, lend labor to and borrow from neighboring railroads.

h. Cooperate with the community in providing facilities such as nursery schools, housing projects, car-sharing plans in order to release more women for full or part-time work.

i. Make it known that railroad jobs are available for women. While telling the truth about the work play up the romance of the railroad industry; the job has to be sold to the women as well as the women to the company.

j. To relieve emergency shortages appeal to employees or women in outside pursuits to do week-end part-time work.

IV. Since most of the available women have no experience in railroad work and many are unaccustomed to shop routine or industrial discipline they should be very carefully trained, not only with regard to how to do the job but how to behave on the job. It is also necessary in almost all communities to pay employees during the training period. The training should be inaugurated well in advance of the time when the women will be needed for production or service work.

V. It is as important to train foremen, chief clerks and other supervisors of women with regard to basic principles involved in properly handling women employees as it is to train the women themselves.

VI. If women do the same work as the men who preceded them, they should be paid the same wage as a man would receive, otherwise they should be paid an amount proportional to that part of the man's job which they actually perform.

VII. In order to encourage replacement of men by women, temporary agreements should be made with the representatives of the employees concerned, which modify the seniority provisions of existing agreements so that they will facilitate increased employment of women.

VIII. Provision of good working conditions, comfortable rest rooms and adequate toilet facilities is very important to women employees. This also helps to offset an unfavorable wage differential in comparison with other war industries.

IX. If the number of women employed at a given point is sufficiently large to justify it, a woman should be employed to act as counselor. She would deal with those work and personal problems peculiar to women, which male supervisors would probably not appreciate or think about.

X. Absenteeism and turnover among women can be materially reduced by cultivating a sense of responsibility through explaining the purpose of the work and how it fits into that of the entire work unit. Healthy competition created by organizing the work on a team basis may also be helpful.

XI. The performance of women workers depends very largely upon the attitude of management towards them and the care and imagination which is shown in helping them to become oriented in a new environment.

XII. The presence of women in a so-called man's industry tends to lighten, brighten, and humanize the atmosphere for all employees, with the result that cooperation improves and output increases, that is, if both the men and the women are handled wisely and firmly from the beginning.

XIII. It is the responsibility of management and labor to get together and explore the possibilities for employment of women with a view to determining what temporary modifications of existing agreements are required in order to permit maximum utilization of women.

C. LIST OF SUITABLE OCCUPATIONS FOR WOMEN ON RAILROADS (OTHER THAN THOSE CUSTOMARILY PERFORMED BY WOMEN)

Accountant
Acetylene Cutter
Ashpitman
Assistant Priority Director
Assistant to Superintendent of Telegraph
Attendant, First-Aid
Fuel Station
Lamp Room
Lunch Counter
Lye Vat
Parcel Room
Rest Room
Salvage and Storage Plant
Attendant (Continued)
Sand House
Station
Storeroom
Toolroom
Attorney
Auditor
Traveling
Baggage Checkman
Blacksmith Helper
Boiler Washer
Boilermaker
Helper

Bookkeeper
Brakeman, Road (Passenger)
Yard (Flat Switching)
Cabinetmaker Helper
Car Distributor
Carman
Helper
Carpenter Helper (B & B)
Cashier
Cement and Concrete Worker
Chauffeur
Checker
Claim Agent
Investigator
Cleaner, Caboose
Coach
Freight Car
General
Locomotive
Station
Clerk, Accountant
Chief
Assistant Chief
Assistant Order
Assistant Price
Assistant Purchase Invoice
Assistant Statement
Bill
Car
Claim
Commissary
Crew
Distributor
File
Freight
General
Hurry
Information Bureau
Invoice
Lead
Line Stock Book
Mail
Materials
Order Writer
O. S. & D.
Per Diem
Pick-up and Delivery
Rate (Senior and Junior)
Record
Remittance
Report

Clerk (Continued)
Requisition
Reservations Bureau
Rodman
Roundhouse
Seal
Specialist
Station
Statistical
Stock
Stockbook
Supervisor
Tariff (Senior and Junior)
Telegrapher
Telephoner (Interlocking Tower)
Telephone
Ticket
Tonnage
Waybill
Yard
Clock Repairer Helper
Coach Porter
Waiter
Cook (Camp Car and Restaurant)
Copy Writer (Advertising)
Coremaker
Craneman (Steam and Gas)
Crew Caller
Crew Dispatcher
Crossing Flagman
Depot Passenger Agent
Designer and Detailer (Drafting Room)
Detective
Dietitian
Dining Service Inspector
Dispatcher, Train (in less difficult locations)
Engine
Draftsman
Drawbridge Tender
Electrician
Helper
Engine Supplyman
Wiper
Engineer (Diesel Switch Engine)
Extra Gang Man
Fire Lighter
Fireman (Diesel Switch Engine)
Flue Blower
Forewoman
Gang

Gateman
Guard
Hostler, Inside
Hostler Helper, Outside
Inspector, Equipment and Supplies
    Freight Car
    Passenger Car
Iron Worker Helper
Janitor
Journal Box Packer
Kitchen Helper
Laboratory Assistant
Laborer
Lagger
Lampman
Laundry Worker
Legal Assistant
Letterer (Including map coloring)
Librarian
Locomotive Lubricator
    Preparer
Machinist
    Helper
Mail Distributor
    Handler Helper
    Package Sorter
Material Supply Man
Materials Handler
Messenger, Delivery
    Motor Cycle
    Office
Oiler (Shop, Yard and Power Plant)
Operator, Air Compressor
    Baling Machine
    Blueprint Machine
    Bolt Cutting Machine
    Bolt Lathe
    Boring Mill (Small)
    Box Lathe
    Car Retarder
    Chore-boy Truck
    Compressing Machine (Making grease cakes)
    Crane (Electric, Steam, Gas)
    C. T. C. (Less difficult locations)
    Dictaphone
    Die Grinder
    Drill Press

Operator (Continued)
    Electric Truck
    Elevator (Passenger and Baggage)
    Engine Lathe (Small)
    Forging Machine
    Heater Furnace (Small Parts)
    Heel Grinder
    Hydraulic Press
    Machine Cutter
    Mechanical device
    Metal Power Shears (Light)
    Metal Saw
    Microfilm
    Milling Machine
    Morticing Machine
    Motor Vehicle
    Nut-tapping Machine
    Planer
    Pneumatic Hammer
    Portable Grinder
    Portable Milling Machine
    Power Hammer
    Power Roller
    Power Saw
    Power Sewing Machine
    Printer Teletype Machine
    Pumping Equipment
    Punch Press
    Radial Drill
    Shaper
    Spindle Drill
    Straight Grinder
    Steam Hammer
    Table Drill
    Telephone Switchboard
    Teletype Machine
    Tumbler
    Turntable
    Turret Lathe
    Twin Chuck Horizontal Drill
    Wire Brush Machine
    Wheel Lathe
Painter (B & B)
Painter (Carman)
    Helper
Pantry Man
Pass Bureau Chief
Passenger Traffic Representative
Patternmaker Helper
Paymaster

Photographer
    Helper
Pillow Vendor
Plumber Helper
Policeman
Porter (Using Baggage Truck)
Printer
    Helper
Real Estate Agent
Receptionist
Record Keeper (Drafting Room)
Rivet Bucker
Rivet Heater
Riveter
Rodman
Sand Dryer
Scrap Cutter
    Sorter
Sealer (Freight Car)
Seamstress (Laundry)
Secretary
Sectionman
Sheetmetal Worker
    Helper
Sign Painter
Signal Maintainer Helper
Signalman Helper
Space Distributor (Reservations)
Spray Painter
Station Agent
Stationmaster Assistant
Statistician
Stenographer
Steward (Dining Car)
Stock Taker
Stockman
Storekeeper
    Assistant
    Caboose Supplyman
    Counterman
Sweeper
Switchtender
Tallyman
Tax Agent
Telegrapher
Telephone Repairman Helper
Telephoner
Ticket Agent
    Assistant
Ticket Collector
    Seller
Timekeeper
Toll Collector
Toolroom Attendant
Towerman or Leverman (Interlocking Tower where light traffic)
Tracer (Drafting Room)
Tractor Driver
Traffic Agent
Train Announcer
Truck Driver (Pick-up and Delivery)
Trucker (Freight and Baggage)
Typist
Upholsterer
    Helper
Usher (Station)
Waiter, Dining Car
    Restaurant
Warehouseman
Watchman (B & B)
    Crossing
    Engine
Water Tester
Welder (Electric and Oxyacetylene)
Employment Supervisor
Yard Checker

OFFICE OF DEFENSE TRANSPORTATION
DIVISION OF TRANSPORT PERSONNEL
Washington

February 22, 1944

ERRATUM

Please make the following correction in a bulletin which we mailed to you early in February 1944, entitled, FEDERAL AND STATE LEGISLATION AND REGULATION AFFECTING THE EMPLOYMENT OF WOMEN IN TRANSPORTATION, revised January 1944:

Strike out from the third and fourth lines from the bottom of page 16 the following words: "unless extended by the I.C.C. in any particular case after a full hearing."

The Interstate Commerce Commission has no power to extend hours of employees engaged in or connected with the operation of trains, even in cases of emergency.

Otto S. Beyer

Otto S. Beyer, Director
Division Transport Personnel

FEDERAL AND STATE LEGISLATION AND REGULATIONS AFFECTING THE EMPLOYMENT OF WOMEN IN TRANSPORTATION

WOMEN'S BUREAU
DEPARTMENT OF LABOR

Prepared by the Division of Transport Personnel, Office of Defense Transportation; the Division of Labor Standards, and the Women's Bureau, United States Department of Labor.

Revised January 1944

FOREWORD

Repeated calls for eligible men to enter the armed services together with increasing demands for skilled workers in war industries necessitates employment of women in every job where a woman can possibly be used. Though transportation has in the past been considered preeminently a man's industry, it is now imperative that women should be employed not only in occupations known in the past as women's jobs but also in many others customarily reserved for men. The transportation industry has for many years utilized women in offices, in hotels, in restaurants, and in laundries. This experience will prove useful as women are introduced into workshops, yards, stations and other work in places unusual for women. Nevertheless new questions and problems are bound to arise as women are placed in these new working conditions.

To promote efficiency and output as well as to protect the health and safety of women workers, most states have already embodied accepted standards with regard to the employment of women in State laws. These laws differ in essential respects, however. And, since the war began, provisions for obtaining exemptions from certain laws have been made in most of the states.

There are also Federal laws applying to both men and women in the transportation industry. Among these are the Hours of Service of Motor Carriers Act, the Hours of Railroad Employees Act, the Adamson Act, the Civil Aeronautics Act, and the Fair Labor Standards Act. These laws and the regulations issued under them, contain specific requirements regarding hours, wages, and other matters affecting employees in the transportation industry.

This bulletin constitutes a summary of State and Federal legislation affecting women working in the different branches of transportation, and the names of the State agencies from which exemptions may be obtained.

For further details it will be necessary to consult the State and Federal statutes and regulations concerned.

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I. EXEMPTIONS FROM STATE LAWS AND REGULATIONS

When war increased the demand for around-the-clock production, every State adopted temporary regulations permitting war plants, where necessary for maximum output, to employ women at night. In most States temporary permits are also granted for women to work longer than the legal hours in emergency situations. A number of States have also relaxed their restrictions on weight lifting and on prohibited occupations for women. This is done through temporary exemptions granted by the appropriate State authority when a carrier finds this necessary for efficient operation.

The procedure followed by most State Labor Departments in handling requests for exemptions is: (1) the employer makes an application to the State Labor Department alleging need for an exemption and existence of war work; (2) the State Labor Department makes an investigation to determine whether such need exists, taking into consideration such factors as the existence of a labor shortage, and the possibility of more efficient operation and more adequate training facilities. Permits so far have been issued only for war work and usually only for a specified period of time, with the possibility of renewal. Every State with a night work law has made provisions for relaxing that law when war work is to be done.

Copies of State labor laws, applications for variations from such laws, and advice on special problems may be secured from the following agencies responsible for the enforcement of State labor laws:

Alabama	- Department of Industrial Relations, Montgomery
Arizona	- Industrial Commission, Phoenix
Arkansas	- Department of Labor, Little Rock
California	- Department of Industrial Relations, San Francisco
Colorado	- Industrial Commission, Denver
Connecticut	- Department of Labor and Factory Inspection, Hartford
Delaware	- Labor Commission, Wilmington
District of Columbia	- Minimum Wage and Industrial Safety Board, Washington
Florida	- Industrial Commission, Tallahassee
Georgia	- Department of Labor, Atlanta
Idaho	- Industrial Accident Board, Boise
Illinois	- Department of Labor, 205 West Wacker Drive, Chicago
Indiana	- Division of Labor, Department of Public Works and Commerce, Indianapolis
Iowa	- Bureau of Labor, Des Moines
Kansas	- State Labor Department, Topeka
Kentucky	- Department of Industrial Relations, Frankfort

Louisiana	- Department of Labor, Baton Rouge
Maine	- Department of Labor and Industry, Augusta
Maryland	- Office of Commissioner of Labor and Statistics, Baltimore
Massachusetts	- Department of Labor and Industries, Boston
Michigan	- Department of Labor and Industry, Lansing
Minnesota	- Industrial Commission, St. Paul
Mississippi	- Bureau of Industrial Hygiene and Factory Inspection, State Board of Health, Jackson
Missouri	- Department of Labor and Industrial Inspection, Jefferson City
Montana	- Department of Agriculture, Labor and Industry, Helena
Nebraska	- Department of Labor, Lincoln
Nevada	- Department of Labor, Carson City
New Jersey	- Department of Labor, Trenton
New Hampshire	- Bureau of Labor, Concord
New Mexico	- Labor and Industrial Commission, Santa Fe
New York	- Department of Labor, 80 Centre Street, New York City
North Carolina	- Department of Labor, Raleigh
North Dakota	- Department of Agriculture and Labor, Bismarck
Ohio	- Department of Industrial Relations, Columbus
Oklahoma	- Department of Labor, Oklahoma City
Oregon	- Bureau of Labor, Salem
Pennsylvania	- Department of Labor and Industry, Harrisburg
Rhode Island	- Department of Labor, Providence
South Carolina	- Department of Labor, Columbia
South Dakota	- Office of Industrial Commissioner, Pierre
Tennessee	- Department of Labor, Nashville
Texas	- Bureau of Labor Statistics, Austin
Utah	- Industrial Commission, Salt Lake City
Vermont	- Department of Industrial Relations, Montpelier
Virginia	- Department of Labor and Industry, Richmond
Washington	- Department of Labor and Industries, Olympia
West Virginia	- Department of Labor, Charleston
Wisconsin	- Industrial Commission, Madison
Wyoming	- Department of Labor and Statistics, Cheyenne

II. STATE HOURS LAWS AND REGULATIONS 1/

Over a period of years State laws have tended to reduce the legal working hours of women. This is in line with industrial experience that over-long hours reduce rather than increase output by adversely affecting the

1/ In the interest of public safety, practically every State has enacted laws limiting the number of consecutive hours of work or prescribing rest periods for specified employees (men and women) engaged in operating trains or buses. Interstate Commerce Commission regulations and the Fair Labor Standards Act apply to both sexes engaged in interstate commerce. Since transportation companies have operated under these laws for years, they are not included in this summary.

the health and morale of the worker. In transportation there exists the added risk to public safety resulting from excessive working hours.

When war brought twin demands for expanded production and recruitment of men for the armed services, most States responded by temporarily adjusting laws for women and minors in order to extend legal working hours where necessary to allow maximum output or service.

This summary of hours does not indicate all of the specific occupations to which the law applies in each State nor the full details of regulations. For example mercantile and beauty shop occupations are omitted. An attempt has been made, however, to include occupations in which women are likely to be employed in the transportation industries. Some of the laws specifically apply to transportation, others cover this field under broad interpretation of industry definitions. The daily and weekly limitations on hours of work for women over 18 years of age, contained in State laws are indicated below:

Daily and Weekly Limitation on Hours of work for Women over 18 Years of Age.

The maximum legal hours of work in each State are indicated by three figures: for example "8, 48, 6" means 8 hours a day, 48 hours a week, and 6 days a week. If the daily hours must be within a certain period it is indicated as follows: "8 in 10". State safety regulations applying to both male and female employees in transportation are not indicated below since transportation companies have operated under these laws for many years and are therefore familiar with them.

Alabama	No limitation (except for drivers in motor transportation where regulations apply to both men and women).
Arizona	Most occupations except telephone offices and railroad yard offices employing three or fewer women -- 8 in 13, 48, 6 (7-day week if 6 hours a day or less).
Arkansas	Most occupations and establishments, specifically including express, transportation, manufacturing, mechanical, restaurant, and laundry - basis of 8, 6, with overtime at time and one-half. Permit required for overtime in excess of 1 hour a day or 6 days a week.
California	Most establishments, specifically including express, transportation, manufacturing, mechanical, restaurant, laundry, telephone and telegraph - 8, 48, 6. Additional hours on permit during war.
Colorado	Public housekeeping and laundries - 8, 48, 6; manufacturing and mechanical establishments and restaurants - 8. Additional hours on permit during war at time and one-half for overtime.

Connecticut	Manufacturing and mechanical establishments and laundries - 9, 48, 6; (10 hours one day a week); 10, 55 on permit for 8 weeks a year and for longer period during war; restaurants - 9,52,6.
Delaware	Most establishments, specifically including manufacturing, mechanical, telephone and telegraph offices, restaurants and offices - 10 (12 hours one day a week; 8 hours if after 11 p.m. in telephone and telegraph offices and restaurants) 55, 6 suspended during war.
District of Columbia	Most establishments, specifically including manufacturing, mechanical, express, transportation, restaurant, laundry, and telephone and telegraph offices - 8, 48, 6; 8, 54 on permit during war.
Florida	No limitation (except in motor transportation, and train and engine service where regulations apply to both men and women).
Georgia	No limitation (except in textiles; for employees operating railroad trains and for drivers in motor transportation where regulations apply to both men and women.
Idaho	Most establishments specifically including express, transportation, laundry, restaurant, manufacturing, mechanical, telephone and telegraph, and offices -- 9.
Illinois	Most establishments specifically including express, transportation, public utilities, common carriers, restaurant, manufacturing, mechanical -- 8 (except 9 for 1 day a week and 10 for telegraph and telephone operators between 7:30 p.m. and 8 a.m. if four hours sleep allowed), 48, 6, - . On permit 10,54 for 10 weeks a year and 7-day week for 8 weeks a year but not for more than 2 consecutive weeks, during war.
Indiana	No limitation (except for operators of motor vehicles and specified railroad employees that apply to both men and women).
Iowa	No limitation (except for drivers of motor vehicles and employees concerned with the movement of trains, that apply to both men and women.
Kansas	Laundry -- 9 in 10, 49½ (52 if daily hours not exceeded); public housekeeping including restaurants, and hospitals, and janitresses and car cleaners -- 8, 48; telephone exchanges with more than two operators on duty at one time -- 8, 48, 6; manufacturing -- 9,49½ (54 in emergencies), 6. Additional hours on permit during war.

Kentucky	Most establishments specifically including mechanical, laundry, restaurant, telegraph and telephone -- 10, 60; all occupations, women under 21 -- 10, 60.
Louisiana	Most establishments in towns over 6000 specifically including transportation, manufacturing, mechanical, telegraph, telephone, restaurant, laundry establishments, and freight and passenger elevator operators -- 8 (during war up to 10 if paid time and one-half), 48, 6. Most occupations in towns of 6000 or less -- 9, 54. Additional hours on permit during war.
Maine	Manufacturing and mechanical establishments -- 10, 54. More than 10 a day but not more than 54 a week on permit during war. Telephone exchanges employing more than 3 operators, express and transportation companies, restaurants, laundries and telegraph offices, -- 54.
Maryland	Manufacturing and mechanical establishments and laundries -- 10 (8 if work done after 10 p.m.), 60.
Massachusetts	Most establishments specifically including express, transportation, manufacturing, mechanical, telegraph, telephone and laundry -- 9, 48, 6. Additional hours on permit during war.
Michigan	Most establishments specifically including laundry, restaurant, manufacturing, workshops, offices, and the operation of street and electric railways -- 10, 54.
Minnesota	Most occupations specifically including public housekeeping, telephone operators (except in towns under 1500 or when working 12 hours or less at night with four hours for sleep) manufacturing, mechanical and laundry -- 54. Additional hours on permit during war.
Mississippi	Most occupations (except where public necessity requires it) -- 10, 60.
Missouri	Most establishments in towns of 3,000 specifically including manufacturing, mechanical, laundry, restaurant, (including clerical occupations in those industries), public utilities, express, transportation, common carriers and specifically excluding telephone companies -- 9, 54.
Montana	Most establishments specifically including manufacturing, mechanical, laundry, restaurant, telegraph exchange room, or office -- 8 (Federal laws take precedence)

Nebraska	Most establishments in metropolitan cities and cities of first class specifically including manufacturing, mechanical, laundry, restaurant, and offices, and specifically excluding public service corporations -- 9,54.
Nevada	Most occupations -- 8 in 12, 48 (additional hours permitted in certain emergencies if overtime paid). Employees in communications industry and on common carriers exempt during war.
New Hampshire	Manual and mechanical labor in manufacturing establishments (except when making supplies for United States or State during war) -- 10, 48, 6; manual or mechanical labor in non-manufacturing establishments except operators in telephone and telegraph offices, 10¼, 54. Manual or mechanical labor performed between 8 p.m. and 6 a.m. on more than 2 nights a week -- 8, 48.
New Jersey	Manufacturing establishments, laundries and restaurants -- 10, 54, 6.
New Mexico	Employment of women by express or transportation or public utility business or by any common carrier, 9, 56, except in emergency 60 hours within a 7-day week permitted; time and one-half required after 56 hours. This law does not apply to employees subject to Federal regulations.
New York	Most establishments, specifically including manufacturing, laundry and restaurant, and women over 21 engaged as conductors or guards in operation of any street surface, electric subway, or elevated railway car or train -- 8, (1 ten-hour day and 4 nine-hour days allowed to provide a 4½-hour day in each week), 48, 6; women over 21 in telegraph or messenger service -- 48, 6. Additional hours on permit during war.
North Carolina	Any occupation where 8 or more persons employed, with certain exceptions including offices, railroads, common carriers, and public utilities under jurisdiction of I.C.C. or N.C. Utilities Commission -- 9 in 12, 48 (except 55 in laundries) 6 (except 7 days for telegraph operators and clerks in offices employing 3 or less); workshops if less than 8 employed -- 11, 55; restaurants employing 3 to 8 persons, with office employees specifically excluded -- 10, 55. Additional hours on permit during war.

North Dakota	Most establishments in towns of 500 or more specifically including express, transportation, manufacturing, mechanical, laundry, restaurant, telephone and telegraph offices (except rural exchanges and small offices where special rules established) -- 8½, 48, 6. During war, 10, 54 if partial time and one-half for overtime.
Ohio	Most occupations other than in manufacturing, except communication companies in cities of less than 5,000 -- 8 in 10, 48, 6; manufacturing, 8 in 10, 45, 6. During war 10, 50, 6 (no permit required). Employees of companies furnishing war goods or services exempt, provided excess hours are reported to Labor Department.
Oklahoma	All establishments employing 5 or more women in towns of 5,000 or more, including manufacturing, mechanical, laundry, restaurant, office buildings, warehouses, and telephone and telegraph offices -- 9, 54 (overtime permitted in emergencies for telephone operators and restaurant employees under certain conditions).
Oregon	Most occupations, including laundry, manufacturing, public housekeeping, restaurant, and office work -- 8, 44, 6; telephone and telegraph occupations -- 8, 44; express or transportation companies (except as covered under specific orders) -- 10, 60. Additional hours on permit during war if paid at time and one-half for overtime.
Pennsylvania	Any establishment -- 8 in 10, 44, 5½. During war 10, 48, 6 on permit.
Rhode Island	Most establishments except women working by shifts in the employ of a public utility, such as a railroad, street railway, telephone or telegraph, express and freight, dining car, steamboat, ferry and power boat -- 9, 48. Additional hours on permit during war.
South Carolina	No limitation (except mercantile, and regulations applying to specified occupations on street railways, and drivers of motor trucks engaged in intrastate commerce and employees of certain interurban railroads when regulations are the same for men and women.)

South Dakota	Most occupations, except telephone and telegraph operators -- 10, 54.
Tennessee	Most establishments specifically including manufacturing, mechanical, electrical, laundry, telegraph, telephone and any establishment employing labor or using machinery -- 10½, 57. Additional hours on permit during war.
Texas	Most establishments, specifically including express, transportation, restaurant, laundry, manufacturing, mechanical, telephone, telegraph or other offices (except stenographers, and workers in telephone and telegraph offices in rural districts or in towns of less than 3,000) -- 9, (11 for laundries if double time paid over 9), 54 (in emergencies additional hours if employees consent and double time paid). During war 10 hours a day on permit.
Utah	Most establishments specifically including express, transportation, telegraph, telephone, manufacturing, mechanical office and restaurant -- 8 in 12, 48. Public housekeeping -- 8, 48, 6; laundries 8, 45 (48 if paid time and one-half.), 6.
Vermont	Manufacturing and mechanical establishments -- 9, 50. In emergency 10, 60 for a period of 10 consecutive weeks a year on permit.
Virginia	Manufacturing and workshops, laundries, restaurants, except specified office workers -- 9, 48. During war 10, 56 on permit.
Washington	Most establishments, specifically including manufacturing, mechanical, laundry, restaurant, and offices -- 8, manufacturing, public housekeeping (including restaurants) -- 6-day week. Additional hours on permit during war.
West Virginia	No limitation (except those applying to certain railroad employees and telegraph and telephone operators that apply to both men and women).
Wisconsin	Most establishments, specifically including express, transportation, laundry, restaurant, manufacturing, mechanical, telephone, telegraph (with certain exceptions) -- 9, 50, (night work in express or transportation, mechanical, and in telephone and telegraph offices and restaurants or on permit in manufacturing -- 8, 48); manufacturing and mercantile, including restaurant; with certain exceptions -- 6. Additional hours on permit during war.

Wyoming	Most establishments specifically including manufacturing, mechanical, laundry, and restaurant -- 8 in 12, 48. Additional hours on permit during war.

III. NIGHT WORK LAWS AND REGULATIONS

Insofar as transportation is concerned, night work legislation applies to women 18 and over as the following summary indicates. In every State, however, permission to employ adult women at night is granted to meet wartime needs.

California	Employment of women in laundries prohibited between 10 p.m. and 6 a.m. and in manufacturing establishments between 12 midnight and 6 a.m. Night work on permit during war.
Connecticut	Employment of women in restaurants and manufacturing and mechanical establishments prohibited between 10 p.m. and 6 a.m. Night work on permit during war.
Delaware	Employment of women in manufacturing and mechanical establishments, laundries, and offices prohibited between 11 p.m. and 6 a.m., except where continuous operations are necessary. Night work on permit during war.
District of Columbia	Employment of girls 18 to 21 in messenger service prohibited between 7 p.m. and 6 a.m. and boys 18 to 21 between 12 midnight and 5 a.m.
Indiana	Employment of women in manufacturing establishments prohibited between 10 p.m. and 6 a.m. (12 midnight to 6 a.m. under specified conditions). Law suspended during war but employer must file notice of night work with labor commissioner.
Kansas	Employment of women under 21 in public housekeeping (including restaurant workers and car cleaners) prohibited between midnight and 5 a.m. Employment of women in laundry and manufacturing occupations prohibited between 9 p.m. and 6 a.m. Night work on permit during war.
Massachusetts	Employment of women prohibited between 10 p.m. and 6 a.m. in manufacturing and mechanical establishments; employment of women under 21 prohibited in a number of establishments including telephone exchanges, telegraph or messenger services and garages, between 10 p.m. and 6 a.m. Night work on permit during war.
Nebraska	Employment of women prohibited in manufacturing and mechanical occupations, laundries, restaurants or offices, except public service corporations, in cities of the first class between 1 a.m. and 6 a.m. unless employer obtains a permit from the Commissioner of Labor.
New Jersey	Employment of women prohibited between midnight and 7 a.m. in laundries, restaurants (except in hotels) and manufacturing establishments. Night work on permit during war.

New York	Employment of women over 21 in manufacturing and laundries prohibited between 10 p.m. and 6 a.m. (under 21 between 9 p.m. and 6 a.m.); women over 21 employed as conductors or guards of street surface, electric subway or elevated railways between 10 p.m. and 6 a.m. (under 21 prohibited altogether); women over 21 in restaurants, with exceptions, between 12 midnight and 6 a.m. (under 21 between 10 p.m. and 6 a.m.); women over 21 as messengers, between 10 p.m. and 7 a.m. (under 21 prohibited altogether). Night work on permit during war.
North Dakota	Employment of women in laundries prohibited before 6 a.m.
Ohio	Employment of women as ticket sellers prohibited between 10 p.m. and 6 a.m. Regulation suspended during war. Employment of girls under 21 prohibited in most occupations between 10 p.m. and 6 a.m. Regulation suspended during war.
Pennsylvania	Employment of women in manufacturing prohibited between 10 p.m. and 6 a.m.; employment of girls under 21 prohibited in most establishments (except telephone operators over 18) between 9 p.m. and 6 a.m.; employment of minors under 21 in messenger services prohibited between 8 p.m. and 6 a.m. Night work on permit during war.
Rhode Island	Employment of persons under 21 as messenger prohibited between 10 p.m. and 5 a.m.
Wisconsin	Employment of women in laundries and manufacturing prohibited between 6 p.m. and 6 a.m., except office workers and charwomen; employment of minors under 21 in messenger service in first-, second- and third-class cities prohibited between 8 p.m. and 6 a.m. Night work on permit during war.

There are also limited night work laws such as are found in New Hampshire, Delaware, Maryland, and Wisconsin, where employment of women in some occupations during specified night hours must be limited to 8 hours per night or 48 hours per week. This provision is suspended in Delaware; additional hours are allowed in Wisconsin on permit during war.

IV. MEAL AND REST PERIODS

Twenty-four States and the District of Columbia require meal or rest periods for women in most occupations of the transportation industry.

If a 30-minute meal period is provided for employees, State legal requirements are met except in the following States:

Delaware	Most establishments, 45-minutes after 6 hours' work, or 6½ hours' continuous work permitted if work-day ends at 1:30 p.m.; not less than 30 minutes for mid-day or evening meal period.
District of Columbia	Most establishments where 3 or more women employed, 45 minutes after 6 hours' continuous work, except 6½ hours' continuous work permitted if work ends not later than 1:30 p.m. and workers dismissed for the day.
Indiana	Most occupations, 1 hour, except by permit.
Kansas	Manufacturing establishments, 45 minutes after 5 hours of work (except 30 minutes where 8-hour day). Laundries, 1 hour after 6 hours of work except that employers and employees may agree to one half hour. Shorter period on permit during war.
Louisiana	Most occupations, in establishments located in towns of less than 6,000, 1 hour or by agreement of two-thirds of the employees, 30 minutes. Shorter period on permit during war.
Massachusetts	Manufacturing, mechanical and mercantile establishments (including restaurants), 45 minute meal period after 6 hours' work, or 6½ hours' continuous work permitted if work day ends at 1 p.m., or 7½ hours if employee allowed to eat lunch on duty and work day ends at 2 p.m. Shorter period on permit during war.
New York	Manufacturing establishments and conductors or guards in surface subway and elevated trains, one hour except by permit; other establishments 45 minutes except by permit; additional period of 20 minutes between 5 and 7 p.m. if shift starts before noon and continues after 7. Shorter period on permit during war.
North Dakota	Public housekeeping, (including food and lodging services and cleaning building and equipment, specifically cars) 60 minutes if employees must leave premises (otherwise 30).
Ohio	Most establishments, 60 minutes if no lunch room (otherwise 30 minutes); not more than 5 hours' continuous employment without 30 minute meal period. During war not more than 6 hours' continuous employment without 12-minute lunch period for women operating street car, trackless trolley, or motor coach.

Oregon	Manufacturing, office, telephone and telegraph occupations, 45 minutes after 6 hours; laundries with 2 or more employees, 45 minutes after 5 hours. Shorter period on permit during war.
Utah	Restaurant, laundry, and public housekeeping occupations, (including food and lodging service), 10 minute rest period after every 4 hours or fraction thereof, (30 minute meal period in restaurants and public housekeeping).
Washington	Offices, 45 minutes after 5 hours; telephone, telegraph, or any other public occupation, 60 minutes. Shorter period on permit during war.
Wisconsin	Manufacturing and laundry establishments, 1 hour if employed more than 6 hours (except 45 minutes where lunch room), 15 minutes if employed 4½ to 6 hours; mechanical, telegraph, telephone, express or transportation establishments, 1 hour; restaurants, 1 hour (except 30 minutes if meal eaten on premises and time between meals does not exceed 5 hours). Shorter period on permit during war.

V. MINIMUM WAGE REGULATIONS

The wages of women workers may be governed by State minimum wage laws as well as by the Fair Labor Standards Act. Employees engaged in certain occupations in the transportation industry (such as executive, administrative, professional, etc.) are exempt from both the wage and hour provisions of the Act; other employees subject to hours' regulations of the Motor Carrier Act of 1935 (drivers and helpers, mechanics and loaders) and Part I of the Interstate Commerce Act are exempt only from the overtime provisions of the Act.

Minimum wage rates have been established for various occupational groups by 26 States, the District of Columbia, Alaska, Hawaii, and Puerto Rico. Copies of minimum wage laws and wage orders may be obtained from State Labor Departments. If employees in transportation occupations are paid at least 40¢ an hour and time and one-half the regular rate of pay for hours over 40 a week, the requirements of both State and Federal minimum wage laws are being met, except in the following cases:

State	Occupation or Industry	Minimum Wage Rate
California	Transportation including all operations and services performed in conveyance of persons or property from one place to another except those functions of the industry performed under the following orders:	$20 for 40 hours; 55¢ an hour for less than 40 hours; 50¢ an hour for more than 40 hours.
	Laundry and dry cleaning Manufacturing, including repairing Mercantile Professional, technical, clerical Public housekeeping	$18 for 40 hours; 50¢ for less than 40 hours; 45¢ for more than 40 hours.

State	Occupation or Industry	Minimum Wage Rate
District of Columbia	1. Public housekeeping, including food and lodging services and cleaning of buildings and equipment (including cars).	Rates in excess of 40¢ an hour for some occupations.
	2. Laundry: Productive plant workers.	$14.50 a week of 16 to 44 hours.
	Store clerks, office, elevator and telephone.	$17 a week of 40 to 48 hours.
	3. Office: Office employees (except in laundries), including telephone and telegraph operators.	$17 a week of 30 to 44 hours - 50¢ an hour for less than 30 hours or more than 44 hours.
	4. Manufacturing: Productive workers.	$16 a week of 32 to 44 hours.
	5. Elevator operators.	$17 a week of 40 to 48 hours.
Massachusetts	Office Workers.	$16 a week of 36 to 48 hours. 47¢ an hour for less than 36 hours.
Minnesota	Any occupations in cities of 50,000 or more, except needlecraft and laundries.	$15 a week of 36 to 48 hours.
Nevada	All occupations	$3 a day, $18 a week, time and one-half for over 8 hours a day or 48 hours a week (when permitted during rush periods).
New Jersey	Restaurant Occupations Non-service employees receiving no meals	48¢ per hour for less than 24 hours; 67½¢ per hour for more than 48 hours work.
	Non-service employees receiving one meal	63¢ per hour for more than 48 hours work.
New York	Laundry occupations, except plant maintenance and office	$14 a week of 40 hours or less. During war, part-time at less than $14, on permit.

State	Occupation or Industry	Minimum Wage Rate
Pennsylvania	Restaurant occupations Non-service employees receiving no meals	42¢ an hour for less than 24 hours work.
Alaska	All occupations.	45¢ an hour for part-time work.

VI. PROHIBITED OCCUPATIONS

As an emergency war measure most States will grant permission for the employment of women in prohibited occupations in war industries if application is made to the State labor commissioner and the need in order to achieve maximum output is established. The following list indicates only those prohibitions which relate to transportation.

Colorado	Prohibits employment of women in coke ovens.
Connecticut	Prohibits employment of women immediately before and after childbirth.
Louisiana	Prohibits women from cleaning moving machinery.
Massachusetts	Prohibits employment of women immediately before and after childbirth and under certain conditions, in core making.
Minnesota	Prohibits core making under certain conditions and cleaning moving machinery.
Missouri	Prohibits employment of women immediately before and after childbirth and from cleaning moving machinery.
New Jersey	Prohibits handling dry substances or compounds containing more than 2 per cent lead.
New York	Prohibits employment of women immediately before and after childbirth; core making under certain conditions; cleaning moving machinery; working on certain kinds of moving abrasives. Employment in these occupations may be allowed on permit during war.
Ohio	Prohibits core making under certain conditions; cleaning moving machinery; work on certain kinds of moving abrasives; employment in trucking and railroad section work; other occupations including crossing watchman, express driver, molder, taxi driver, jitney driver, freight or baggage elevator operator, baggage or freight handler, delivery service, work in blast furnaces, smelters, shoe shining parlors. Prohibitions suspended during war.

Oregon	Prohibits employment of women in messenger service.
Pennsylvania	Prohibits core making under certain conditions; trucking and railroad section work; handling dry substances or compounds containing more than 2 per cent lead; operating cranes; calling train crews; maintaining fires in hand-fired boiler furnaces; and welding and cutting (specified processes) unless certain conditions are met. May be allowed on permit during war.
Vermont	Prohibits employment of women immediately before and after childbirth.
Washington	Prohibits employment of women immediately before and after childbirth.

Employment of women in mines is prohibited in 17 States; in quarries in 5 States.

VII. WEIGHT LIFTING RESTRICTIONS

Several States regulate lifting and carrying of weights. Some States permit variations of the law to meet wartime needs.

California	Boxes, baskets or other receptacles weighing with their contents 50 pounds or more must be equipped with pulleys, casters, or other contrivances so they may be mechanically moved.
	Prohibits carrying any receptacle weighing with its contents 10 pounds or over up or down any stairway that rises more than 5 feet from the base.
	Specifies 25 pounds as maximum weight to be lifted or carried. Heavier weights on permit during war.
Massachusetts	Receptacles weighing with their contents 75 pounds or more must be equipped with contrivances enabling them to be mechanically moved.
Michigan	Prohibits the lifting of over 35 pounds and sets the maximum at 20 pounds while ascending stairs.
Ohio	Prohibits employment requiring frequent or repeated lifting of weights in excess of 25 pounds. During war, 35 pounds.
Oregon	Prohibits the lifting of over 25 pounds dead weight and prohibits the lifting or carrying of over 15 pounds for a distance of more than 10 feet. Heavier weights may be allowed on permit during war.

Pennsylvania	Prohibits the lifting of heavy weights in explosive plants. In welding and cutting operations, prohibits the lifting of material weighing more than 15 pounds.
Utah	Prohibits the lifting of burdens in excess of 30 pounds and carrying of more than 15 pounds.
Washington	Prohibits lifting or carrying an excessive burden.

VIII. FEDERAL HOURS LAWS AND REGULATIONS

Federal laws which regulate the hours of workers in the transportation industry or under which regulations may be issued are summarized here. Because regulations change they are not summarized here. It is advisable to consult the appropriate administrative agency for details of prevailing regulations.

Hours of Service of Motor Carriers Act

The Interstate Commerce Commission is empowered to issue regulations governing the hours of service of employees whose activities affect safety of operation of motor vehicles. The Commission has ruled that this means drivers and helpers, mechanics and loaders. To date regulations have been issued for drivers only.

Administrative Agency: Interstate Commerce Commission, Washington, D. C.

Hours of Railroad Employees Act

Employees engaged in or connected with the movement of trains:
16 consecutive hours on duty, after which they shall have 10 consecutive hours off duty, or
16 hours in the aggregate, on duty, in 24, followed by 8 consecutive hours off duty.

Train dispatchers, operators, or other employees in:
(a) Offices operated night and day - 9 hours in 24.
(b) Offices operated only during day - 13 hours in 24.

The provisions are suspended in case of casualty or unavoidable accidents, or act of God.

In case of emergency, overtime is permitted for 4 hours in 24 and not exceeding 3 days a week, unless extended by the I.C.C. in any particular case after a full hearing.

Crews of wrecking and relief trains are exempt.

Administrative Agency: Interstate Commerce Commission, Washington, D. C.

Adamson Act

Employees engaged in operation of trains in common carrier service including companies furnishing terminal and transfer facilities: Employees of railroads independently owned and not exceeding 100 miles in length, electric street railroads, and interurban railroads, are not covered. Eight hours constitute a day's work in contracts for service and for computing compensation.

Civil Aeronautics Act

The Civil Aeronautics Board under its power to make safety regulations may fix maximum hours for employees of air carriers who are covered by the Act. Regulations have been issued for several classes of employees, such as pilots, co-pilots, and crew members.

Administrative Agency - Civil Aeronautics Board, Washington, D. C.

Fair Labor Standards Act

Hours are not limited by the Fair Labor Standards Act. For overtime provisions see Section V-Minimum Wage Regulations of this Summary.

Administrative Agency: Wage and Hour and Public Contracts Division
U.S. Department of Labor, 165 W 46 Street,
New York, New York.

Xerox copy

SUMMARY OF CLIPPINGS

POST
Washington
11/4/44

WOMEN BUS DRIVERS DEFENDED BY ODT 12/13/44

The ODT's experience with women bus drivers has been extremely satisfactory, according to Guy A. Richardson, assistant director of the Highway Transport Department. Mr. Richardson wrote to the Post following the appearance of a story which reflected upon women bus drivers. He asked the Post to let its readers know that the ODT believes women in transportation have made a very real and valuable contribution.

N. Y. TIMES
11/4/44

VICTORY FOR BRITISH WOMEN

The women of Britain won a partial victory in their battle to get equal rights under the Government's social security plan when the Minister of Education announced that the Government had decided that family allowances should be paid to either wife or husband.

NEW YORK
HERALD TRIBUNE
10/18/44

WOMEN WILL WANT TO KEEP THEIR JOBS

Elsa Graves, a crane operator in a Carnegie-Illinois steel mill in Chicago and chairman of the National Industrial Council of the YWCA says that women who have experienced good-paying wartime jobs will not consider going back to housework and nursemaid job unless wages, hours, social security and other industrial standards are extended to such work. Miss Graves says that many married women will want to continue work to maintain a higher standard of living for their families.

CH. SC. MONITOR
Boston
11/3/44

MRS. CARRIE C. CATT PREDICTS UNIVERSAL FRANCHISE

Mrs. Carrie Chapman Catt predicts that with the war's close women will join hands again in efforts for universal franchise and international justice. The International Woman Suffrage Assn. and other women's organizations have plans made, she says, to call a meeting as soon as it is possible of delegates from all the countries which formerly cooperated, and to demand that the right of suffrage be restored to women as well as men.

TRIBUNE,
Salt Lake City
11/1/44

DEAN GILDERSLEEVE ON "MILITARY TRAINING"

Says Dean Virginia Gildersleeve of Barbard: "If we have compulsory training for national service, I hope we have it for women. On the whole, I am disappointed in the part American women have played in this war."

CHICAGO SUN
10/23/44

ERIC JOHNSTON SEES FUTURE MAXIMUM EMPLOYMENT IN DISTRIBUTIVE TRADES

Eric Johnston, president of the U. S. Chamber of Commerce, believes that maximum postwar employment will depend on the so-called distributive service, and miscellaneous trades rather than on the manufacturing industries.

POST
Washington
11/13/44

CHICAGO HOUSEWIVES UNITE TO SOLVE DOMESTIC HELP SITUATION

Chicago housewives, in their desire to lure factory-employed women back into domestic jobs, have formed a "Household Employers' League." The YWCA employment service will act as a go-between, offering a list of approved of approved homes to any women interested in securing such a job.

WASHINGTON STAR
12/6/44

FEDERAL DEPARTMENT OF HEALTH SUGGESTED

Establishment of a Federal Department of Health, under which all medical and health functions would be coordinated and administered, was proposed at a meeting of the American Medical Association's Council on Medical Service and Public Relations in Washington, December 6. The proposed bureau would be headed by a medical man who would have the status of a cabinet officer.

TIMES
New York
11/4/44

EQUAL PAY FOR WOMEN ORDERED

Equal pay for women for work comparable to that performed by men was ordered by the Regional War Labor Board in a decision affecting employees of the E. W. Bliss Company, a Brooklyn plant doing war work.

CHICAGO TRIBUNE
10/27/44

BRITISH UNION ADVANCES PLAN TO REDUCE GOVERNMENT INTERFERENCE

The Federation of British Industries, Britain's most powerful trade organization, has advanced a plan to reduce government interference in business to a minimum after the war. Asserting that such a plan will provide for orderly transition to peace production, the manufacturers' group suggested that the government confine itself to shaping the framework of a national economic policy and leave details to be filled in by working associations provided by the industries themselves.

11/17/44

CHICAGO TRIBUNE SURVEYS WOMEN WORKERS AS TO THEIR PLANS

The Santa Fe system, which employed 1,300 women before Pearl Harbor and now has 9,000 feminine names on its employe roster, reports that the return of service men will result in the simultaneous return of women to prewar occupations and homemaking.

Of the Illinois Central's 4,000 women employees, 50 percent have expressed a desire to remain in their jobs after the war. Of the 1,600 in general offices, 85 percent did not replace men. Between 75 and 80 percent of the conductorettes want to continue in those jobs. Between 15 and 25 percent of the women replaced men in mechanical jobs want to go back to homemaking.

Approximately 50 percent of Chicago-based stewardesses, all unmarried, expect to leave American Airlines for homemaking after the war.

11/14/44

Interviews with women on the assembly lines of the Chicago plant of the Douglas Aircraft Company and of the Illinois division of the Bendix Aviation Corporation reveal that 39 percent of the Douglas women desire to remain in the same kind of work after the war and 72 percent of Bendix's women employees hope to retain their jobs. About 59 percent (all of them married) of the Douglas women questioned want to return to homemaking, and 2 percent, both married and single, wish to return to peacetime occupations.

11/16/44

57 percent of the several thousand women in war work at the Pullman-Standard Car Mfg. Company's shipbuilding plant want to give up their jobs with the end of the war, according to a recent survey by Dorothy Johnson, Tribune columnist. About 22 percent of the women wish to continue at the plant when it resumes postwar production of freight and passenger cars. 21 percent want to be workers after the defeat of Japan but hope to transfer to office jobs or own their own businesses.

Most of the 1,500 or so women shop employees at the Electro-Motive division of the General Motors Corp., La Grange, will leave their war jobs. Long-deferred marriages or the return of their husbands will account for their departures. The company says that there will be room for both service men and women who have been doing their jobs during war.

CHICAGO NEWS
11/3/44

POSTWAR HOPES OF FARM WOMEN

Many farm women will settle for electricity, running water, and indoor plumbing, according to reports from a home economics conference in Chicago. After these features, farm women want washing machines, refrigerators, stoves, and radios. The deep freeze unit has captured the imagination of many.

CH. SC. MONITOR
Boston
10/14/44

EMPLOYMENT SPECIALIST GIVES VIEWS ON POSTWAR EMPLOYMENT

Pauline Arnold, a specialist in market research, believes that women will have greater opportunities than ever before if the U. S. develops a high level of employment after the war; otherwise women will turn over to men even some of the jobs in which they surpass men. A big field for women in professional work and physical sciences has been predicted by General Mills. The Mutual Benefit Life Insurance Co., holds that women will have an increasingly larger place in life insurance offices and selling. The N. Y. Central System, now employing 9 times as many women as before, considers women's best opportunities in ticket selling and information. Libbey-Owens-Ford Glass Co. expects an increase in use of women in high-grade office and semi-professional work.

The Brewster Aeronautical and Bell Aircraft Corporations both envisage a sharp decline in ratio of women to men in postwar work. One firm manufacturing aircraft engines and parts said they would never again use men on inspection.

N. Y. TRIBUNE
10/27/44

GENERAL ELECTRIC CO., CALLS OFF POSTWAR CONFERENCE

After receipt of a telegram signed by the Secretary of the Navy and the Undersecretary of War, General Electric Company cancelled its scheduled conference on postwar planning. Conference was to be held November 9 and 10.

DAILY WORKER
10/27/44

WOMAN ELECTED PRESIDENT OF INTERNATIONAL UNION

For the first time in American labor history, a woman has been elected president of an international union. Delegates attending 3rd constitutional convention of the CIO United Federal Workers elected Eleanor Nelson, formerly the union's secretary-Treasurer, to the post of president.

N. Y. TIMES
9/23/44

PAY INEQUALITIES FOUND BY BUSINESS & PROFESSIONAL WOMEN'S SURVEY

Although more women are filling policy-making posts and other executive positions than before the war, their salaries have not kept pace with the jobs they are doing according to an analysis made by the National Federation of Business and Professional Women's Clubs. A survey of employmwnt among club members showed that more women are employed in important professional jobs, besides higher positions in clerical and personnel work, but salaries frequently are not the same as for men performing the same duties.

A. F. OF L.
WEEKLY NEWS SERVICE
11/14/44

BONNEVILLE DAM ADMINISTRATION TO NEGOTIATE WITH AFL

The Bonneville Administration has agreed to sit down and negotiate with AFL union rpresentatives, thus paving the way for the establishment of real collective bargaining on the huge northwest power project which takes in both the Bonneville and Grand Coulee dams along the Columbia River.

THE PRESS
Evansville, Ind.
11/11/44

WOMEN WORKERS WANT TO STAY

70 percent of women war workers expect to want regular peacetime jobs, says Northwestern National Life Insurance Company, which has made a survey in war plants.

SENTINEL
Waterville, Me.
10/30/44

TRAINING SCHOOL FOR GIRLS ENVISIONED

A bill has been introduced in the House which would create a sort of West Point, Annapolis, or New London combined for the training of young women for the various branches of the armed services.

WORLD TELEGRAM
New York
10/24/44

WOMEN SHOULD BE AT VICTORY CONFERENCES

While she is appreciative of having been voted "woman best qualified to sit on the American delegation at the peace conference" by the Women's Action Committee for Victory and Lasting Peace, Vera Micheles Dean, research director of the Foreign Policy Assn., thinks it's more to the point to see that qualified women sit in on the special victory conferences. For one thing, she doesn't think there's going to be a peace table. The victory conferences, she said, will take the place of that popular conception of a large group of people gathered around a big mahogany table after the last shot in the war has been fired.

June 22, 1944

Miss Sally Pinkney
~~38 East 58th Street~~ 133 Heacock Lane
~~New York City~~ Wyncote, Pa.

My dear Miss Pinkney:

We are sending you some railroad material which should supplement the scheduled reports quite nicely. Our schedules gave us no numbers of employees on the various jobs but this table shows the complete employment, by sex, in each of the six railroads which we visited. These data are from unpublished reports of Interstate Commerce Commission, cover the entire railroad systems and were copied by me in the I.C.C. offices. Of course the identity of the roads must not be disclosed but the material offers a picture of women's employment - distribution by division and job, the percentage of women on each job, and a comparison of the proportion of women in the different railroads.

The long table is original rough w ork showing all the job break-downs before we condensed it. We did not take time to have this typed so these are our only copies which we hope you will keep well guarded.

If there are any questions, please let us hear from you. I hope you are enjoying the railroads and getting along with the report satisfactorily.

Sincerely,

Leo Robison

OCCUPATIONS

TRANSPORTATIONS - 1945

U. S. Department of Labor
WOMEN'S BUREAU
Washington

WARTIME EMPLOYMENT OF WOMEN

ON

RAILROADS

LETTER OF TRANSMITTAL

United States Department of Labor
Women's Bureau
Washington, D. C.

SIR: I have the honor of transmitting a report on the wartime employment of women on railroads, which analyzes the extent of their ~~wartime~~ employment in this key war industry and describes their jobs and working conditions.

This report is based primarily on the data obtained in 1943 and 1944 by regional representatives of the Women's Bureau who gave on-the-ground counseling service to a number of railroad installations desiring to expand the employment of women in occupations normally filled by men.

The field data was obtained by Mary Alice Webb and May Bagwell. The report was written by Caroline A. De Caux.

Respectfully submitted,

Frieda S. Miller, Director

Hon. ~~Louis~~ L. B. Schwellenbach
Secretary of Labor

(See yellow sheets

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SUMMARY OF FINDINGS

The railroads normally employ a very small proportion of women and restrict them largely to clerical, cleaning, and other "housekeeping" and personal service jobs. But after Pearl Harbor thousands entered the industry and many took over jobs filled exclusively by men in ~~the past~~ peacetime.

Between September 1942 and July 1944, the female force of Class I roads ~~more than~~ nearly trebled, increasing from 40 to over 116 thousand, and the total in non-clerical occupations increased more than sevenfold, rising from less than 6 to almost 40 thousand.

Women's importance in moving the nation's wartime traffic is indicated by their employment in about two-thirds of the 128 railroad occupational groups, and by the fact that the 76,000 addition to the female force represented more than 60 percent of the total 1942-1944 personnel increase on Class I roads and about one-fifth the personnel expansion in the 1940-1944 period.

Although even at the peak of their employment women ~~filled~~ were only about 8 percent of ~~the~~ all railroad ~~jobs~~ personnel, in this industry where operations are geared to split-minute schedules and where every unit of equipment must meet exacting safety standards, they represented an extremely important margin of labor.

However, a survey made by the Women's Bureau on 6 roads revealed sharp variations in the proportion and occupational distribution of women between systems and indicates that a much larger number could have been used to relieve the acute labor shortages that continued in this vital industry throughout the war.

On these roads the percentage of women in the total non-clerical force ranged from 1.3 to 9.5 percent, and in the important maintenance of equipment divisions from ~~3.5~~ 7 to almost 17 percent. On comparable types of installations women in some cases were less than ~~only~~ 5 percent while in others they were 25 to 30 percent of the employees. Only a few cases were found where they were doing unsuitable work, but many were reported where suitable jobs were either unfilled or filled by men.

On ~~roads~~ installations with the largest female force, ~~they~~ women were in a wide range of maintenance and transportation jobs previously closed to them. ~~They~~ Some were in practically every type of locomotive and car shop, operating monster hammers and punch-presses, less formidable drill presses, lathes and other metal working machines, and assisting skilled mechanics on an endless variety of production and repair operations. ~~They~~ Some were in roundhouses and yards, servicing, oiling and cleaning locomotives and cars, operating transfer and turntables and helping on light repairs; and ~~they~~ some were on track, roadbed and lighter maintenance of way and buildings jobs.

In the transportation divisions ~~they~~ women were in almost every non-operating occupation, and a large proportion filled highly responsible and exacting jobs as telegraphers, telephoners, small station agents and crew callers and dispatchers. A number were also employed in the very select train operating crews.

While most women in the maintenance divisions were laborers and coach cleaners, one-third on the largest road and about a fourth in the industry as a whole were skilled mechanic's helpers. Five of the six roads had few or no women in skilled production jobs, but on one some were employed in every craft, including such unusual occupations as blacksmiths, boilermakers, car inspectors and foremen of skilled labor.

On all reporting roads women received the same wage rates as men, on most they had the same seniority protection and were upgraded on the same basis as men. However, they were generally excluded from skilled production jobs, and on the largest road all those hired during the war for maintenance work were considered temporary employees. On 5 of 6 roads, however, all who were in maintenance and clerical jobs had the status of permanent employees and could be displaced only on a seniority basis.

* * *

3

INTRODUCTION

In order to handle the nation's wartime traffic, the railroads had to add ~~over~~ nearly ~~400,000~~ 300,000 employees to their force, between 1940 and 1944, and ~~about~~ more than ~~one-fifth~~ fourth of this additional personnel were women. But ~~they~~ railroads were among the last man-employing industries to increase the employment of women or to admit them into occupations normally filled by men. Even in September 1942, 9 months after Pearl Harbor, when Class I roads reported a shortage of some 60,000 workers, only 3 percent of their total personnel and less than 6 thousand of over a million workers in their non-clerical divisions were women. 1/

However, as traffic mounted to unprecedented levels and men by the thousands left the industry to join the armed forces or to seek better paying jobs, labor shortages became more acute, and women began to fill many critical gaps in the labor force of this key war industry. As a means of ~~excellerating~~ accelerating their employment, the Office of Defense Transportation early in 1943 summoned a conference of management, labor and government representatives to discuss the necessity and feasibility of expanding their employment in all domestic transportation services. The urgency of this problem was pointed out by the chief of the O.D.T. Division of Transport Personnel who told the conference that:

> "As manpower shortages become ~~more~~ increasingly acute, one of the major sources of labor from which all branches of transportation must draw will be the women of the nation." And added, "They are our great hope if the transportation systems of the country are to be kept effectively running...
>
> "Never before in the history of the nation have we looked to women as we do today to meet such a problem....During 1943 many thousands will be needed to fill transportation occupations which up to this time have been handled exclusively by men."

1/ Class 1 steam railroads include all steam railroads (other than switching and terminal companies) having an annual operating revenue of more than $1,000,000. ~~In the 1942 [redacted]~~ as late as they accounted for more than 94 percent of the total employment of all steam railroads, including switching and terminal companies.

The Women's Bureau was one of the agencies participating in this conference, and at once instructed its regional representatives to render assistance to railroads interested in an expanded use of women power. This was one of a number of war industries to which Bureau representatives gave on-the-ground counseling service. One of the largest systems in the country requested the Bureau to examine the employment practices on all its installations and recommend methods that might facilitate more extensive employment of women and reduce turnover among them. Between the spring of 1943 and 1944 Bureau agents observed employment practices on all important industrial installations of this system and on 1 ~~to 3~~ or 2 installations of 5 other roads.

In the course of these visits much information of value to other roads was secured. This included data about new jobs on which women were or could be employed; the suitability of their new occupations; their wages, hours, promotion opportunities and other working conditions; their training, personal facilities, and other personnel practices that had a bearing on the availability and stability of women employees and on their safe and efficient employment in occupations previously closed to them.

In this report the findings made on the installations visited as well as the industry-wide employment trends and women's post war opportunities on the railroads are analyzed and summarized.

~~5 0 6~~

SCOPE

In all, 13 industrial installations on 6 of the 32 largest railroads in the country were visited. In April, 1944 these 6 systems employed more than 370,000 workers, or about one-fourth of the total force, and ~~over 43,000~~ nearly 44,000 women, or two-~~thirds~~ fifths of female personnel of all Class 1 steam railroads. The installations actually visited, however, had only ~~approximately~~ 85,000 employees at the time of the survey, and approximately 12,000 of the total were women.

Actual observations of women's jobs and working conditions were limited to the maintenance divisions (where the majority of the women in non-clerical jobs were employed). Statistical data, ~~however, are~~ were obtained showing the distribution of the total female force on these roads in all the standard occupational classifications.

In addition, Interstate Commerce Commission quarterly reports (issued since January 1943), which show the distribution of the entire female personnel of Class 1 steam railroads in the standard I.C.C. classifications have been analyzed. But since many of these I.C.C. classes--especially of maintenance workers--cover a considerable variety of jobs, this data has been used to indicate only the overall trends and the broad outlines of the industry-wide occupational pattern. The more precise information in this report, relating to the nature of the work women were actually doing and to their employment conditions, is based on the findings made in the Bureau Survey.

THE INDUSTRY AND ITS LABOR FORCE

Wartime Importance of Industry and Size of Labor Force.

The provision of adequate rail transportation was basic to the fulfillment of the nation's war production and military ~~training~~ program. For notwithstanding the extensive development of motor truck, intercity bus, airway, pipeline and inland waterway transportations since World War I, the railroads have remained the most important branch of the domestic transportation system and have handled the bulk of the wartime traffic. In the 1942-~~1944~~ 1943 period they provided more than ~~two-thirds~~ seven-tenths of the domestic freight transportation, and their operations, both in passenger and freight miles of service greatly exceeded all previous records. 1/ 2

For decades the railroad labor force has ranged among the largest industry groups in the country. Although in the 1920-1940 period it was cut by almost 50 percent, at the beginning of the war Class 1 roads still employed about 1 million workers. In order to handle the unprecedented volume of wartime traffic these systems added about 400,000 workers to their force by 1944, and more than one-~~fifth~~ fourth of these new workers were women.

Nature of Railroad Operations and Character of Personnel

2/ The revenue tons carried one mile by Class 1 railroads in 1943 exceeded the 1918 total by 73 percent and the 1940 total by 100 percent. The number of passengers was twice as large as in 1940 but lower than in 1918. However, due to longer trips per passenger, passenger miles were about 300 percent above the 1940 ~~carried~~ and 100% above the 1918 level. ~~In the first 6 months of 1944 the railroads carried 75% more tons of freight and over twice as many passengers as in the first 6 months of 1940.~~

Railroad operations fall into three broad categories: (1) transportation, (2) maintenance, and (3) the clerical technical and managerial ~~services~~ activities connected with these activities. While transportation is the primary function of the industry, in terms of numbers of workers employed, maintenance is by far the largest branch of operations. This is primarily due to the fact that railroads build and maintain their own right away, and repair and service all their rolling stock and other equipment. For all classes, this work involves continuous maintenance of almost 400,000 miles of track, tens of thousands of bridges and structures, over 40,000 locomotives and ~~over~~ almost 2 million freight and passenger cars.

The railroad personnel, therefore, in addition to the many special operating and non-operating transportation groups, includes large corps of workers from every major industrial craft and sizeable groups of building trade and construction workers.

Under Interstate Commerce Commission regulations railroads classify their industrial personnel into two major maintenance and two transportations divisions, while the clerical, professional and managerial occupations are classified into two separate divisions.

The distribution of the railroad personnel in these 6 divisions is indicated in the table below:

Table 1. — Number and Distribution of Class I Steam ~~Railroad~~ Employees by Major Divisions - Mid-July, 1944

Occupational Groups	Number	Percent of total
I. Executives, Officials, and Staff Assistants	14,651	1.0
II. Professional, Clerical, and General	232,084	16.1
III. Maintenance of Way and Structures	314,373	21.8
IV. Maintenance of Equipment and Stores	393,400	27.3
V. Transportation (other than train, engine, and yard)	170,198	11.8
VI. Transportation (Yard masters, switch tenders, hostlers, train and Engine)	318,181	22.1
Total	1,442,887	100

The Maintenance of ~~ways~~ and structures division ~~includes~~ covers all the activities connected with maintaining the tracks, yards, and other fixed facilities in condition. The work of employees in this branch includes construction as well as continuous inspection and maintenance of roadbeds and tracks, telegraph and other signaling equipment, bridges and buildings, and all other stationary facilities.

About 20 percent of the railroad labor force is engaged in these activities and approximately ~~90~~ 80 percent of these workers are section and extra gang laborers. Other sizeable groups include: skilled building and construction trades workers and their helpers; signalmen, signal maintainers, and helpers, and operators of portable steam and pumping equipment used on construction work.

The largest groups of unskilled employees are in this division. However, most of this work is heavy and rough or for other reasons largely unsuitable for women. Normally few women are employed in this branch of operations.

The maintenance of equipment and stores division embraces all the activities involved in keeping rolling stock (cars, locomotives and other vehicles) and other equipment in condition, and the receipt, storage, issuing and salvaging of supplies used in railroad operations. The maintenance of equipment work includes cleaning, oiling, and inspection of all rolling stock as well as the repair renovation and rebuilding or building of equipment. All railroads have shops where their rolling stock is repaired, many build and rebuild their cars, and some even build their own locomotives.

Since each car and locomotive is made up of hundreds of parts and all equipment must meet rigid safety specifications, much skilled workmanship by expert mechanics is required from the original inspection and dismantling through all the repair, production and final reassembling operations. In addition a great deal of the skilled work as well as the semi-skilled and unskilled is very heavy.

There are, however, numerous production and repair operations that are light enough for women and require relatively little experience or training. And there is of course a great deal of servicing and renovation work that is essentially of the cleaning variety.

This branch of railroad work has been even of greater importance in war than in peace. For shortages of materials and labor for new equipment coupled with the extraordinary volume of traffic, necessitated the most intensive utilization of available facilities, and increased correspondingly the work involved in keeping them in safe operating condition.

Close to ~~29~~ 27 percent of the railroad personnel is in this division and more than half are skilled mechanics representing ~~every~~ mostly shop crafts. Other skilled groups include inspectors of equipment, shops and stores; stationary engineers and firemen; oilers and, of course, the foremen. The semi-skilled and unskilled groups include: the mechanic's helpers, the apprentices, the laborers and the coach cleaners. Normally the proportion of women in this division is very small and they are generally excluded from production operations.

Transportation (other than train engine and yard)

Practically all non-operating transportation employees (except clerical and professional) are in this division. Numerically important groups include: the telegraphers, telephoners, and towermen; the small-station agents; the baggage, parcel room, station and train attendants; the station, warehouse and platform truckers; the crossing and bridge gatemen and flagmen; the loaders, callers, sealers and inspectors of perishable freight; and the various kitchen and dining service employees. Laundry workers are also in this division. Small but highly ranking groups include the large stationmasters and train dispatchers.

Transportation (Train Engine and Yard)

This division includes all the operating employees engaged in the actual movement of trains. The ICC subdivides these workers into two groups. One includes the yardmasters, switch tenders, hostlers and their assistants. The other, the locomotive engineers and firemen, the conductors, brakemen, flagmen and road baggagemen.

Professional, Clerical and General

In this division are classified all the clerical and professional as well as some non-clerical employees. About one-~~seventh~~ tenth of the total are in the latter group and they include patrolmen, and watchmen, ~~printers~~, elevator operators, motor car operators, and some of the custodial workers.

miscellaneous trades workers,

EMPLOYMENT OF WOMEN

Industry Trends

The maintenance and transportation divisions of the railroads were almost exclusively a man's world before the war. As late as September 1942, the entire industry had less than 6,000 women in these divisions - mostly in cleaning and personal service jobs. Even in the clerical force, where women predominate in a few occupations, they were a relatively small minority (less than 20 percent), and men secretaries, stenographers and clerks are still popular in the industry.

Although some historians like to emphasize the fact that employment of women on the railroads began in the middle of the last century, when a charwoman was engaged on a large road, though most of the railroad era the proportion of women in the industry has been small, and few were employed in industrial jobs. However, during the present war, as well as during World War I women represented a very substantial portion of the war-time addition to the personnel, and close to half of those added during the war entered maintenance and transportation jobs.

In 1910 less than 22,000, or about 6,000 (one-half of one) percent of the railroad employees were women. In 1918 the total rose to more than 100,000, or to slightly over 5 percent of the personnel. But by 1940 the U. S. Census showed only about 36,000 women among the 1,100,000 workers in railroad employment, or approximately 3.5 percent.

During this war, no marked expansion of the female force occurred in this industry until wartime labor shortages became quite acute. In 1941, The Railroad Retirement Board data indicated that the proportion of women was below 3 percent. Even in September 1942, when Class I railroads, in a survey made by the American Association of Railroads, reported close to 60,000 unfilled jobs - only about 40,000, or approximately 3 percent of their total personnel were women, and only about 5,600 were in non-clerical jobs, and over 1,300 of them were telegraphers, telephoners and tower men, and station agents (small stations).

The following two years, however, witnessed a striking increase in the size of the female force. By mid-January 1943 Class I roads had more than 63,000 women on their payrolls. Within another year the number rose to 106,000 and by mid-July 1944 to over 116,000.[1] In the divisions reporting female workers their proportion rose to almost 10 percent, and in the total force to more than 8 percent.

This was the largest number and proportion of women ever employed on the railroads. The importance of the 76,000 wartime addition to the female force is perhaps best indicated by the fact that it represented about 60 percent of the total personnel increase reported by Class I roads between September 1942, and July 1944, and approximately one-fifth of the 1940-1944 increase.

But more significant than the overall expansion, was the sharp rise in the nonclerical divisions, where the number of women increased from 5,600 to almost 40,000, or more than sevenfold, and where they were admitted into a great variety of occupations filled formerly only by men.

The distribution of the 1944 female personnel and proportion they form of all employees in the six major railroad divisions is indicated in the table that follows. (The occupational distribution of the female force is given on pages ——.

Table 2. ~~Total and~~ Distribution of Women Employed on Class I Steam Railroads ~~-~~ occupational groups by Division, Mid-July 1944 1/

Occupational ~~Divisions~~ groups	Number	Percent of Distribution	Percent of Total personnel
Executive, Officials and Staff Assistants:	18	—	0.12 ~~0.15~~
Professional, Clerical and General	77,010	66.1	33.40
Maintenance of Way and Structures	2,746	2.4	0.94
Transportation (other than train, engine and yard)	12,948	11.1	7.97
Maintenance of Equipment and stores	23,333	20.0	6.19
Transportation (Yardmasters switchtenders and hostlers)	69	.1	1.40
Transportation (train and engine)	301	.3	0.34
Total, Reporting divisions in which females are inc.	116,425	100.0	9.95
~~Grand total, All reporting divisions~~	~~116,425~~ ~~116,495~~	—	8.07

1/ Interstate Commerce Commission figures.

2/ Several thousand more women were employed by the American Railway Express, the Pullman Company and Class II and Class III Roads.

As these figures show, two-thirds of the female force in 1944 was in the clerical divisions, and of those in industrial jobs almost ~~two-thirds~~ three-fifths were in the maintenance of equipment and stores divisions. However, even in 1944 women accounted only for about 6 percent of the employees in this important ~~industrial~~ maintenance branch of operations. That this was not due entirely to lack of suitable work is indicated by the data obtained on the roads included in the Bureau survey. They reveal extreme variations in employment practices between systems, and indicate that a much larger proportion of women could have been used to relieve the critical labor shortages that continued in the industry throughout the war.

Employment Trend and Variations on 6 Selected Roads

None of the 6 roads in the Bureau survey employed many women before the war. The largest had only about 1,300 in its force in peacetime, some 4,600 in September 1942, but over 22,000 by mid-April 1944. Another expanded its female personnel in this 1942-1944 period from approximately 2,400 to 6,500, and a third from 1,450 to 3,000. The total increase on 5 reporting systems in this period was from ~~7,650~~ 9,650 to ~~almost~~ more than 34,000. The sixth system, which had few women before the war (no figures obtained), employed more than 9,000 in 1944. In April 1944 these 6 roads had altogether ~~43,333~~ 43,828 women, or approximately two-fifths of the female personnel on all Class I railroads. They employed three-fifths of the 23,300 women in maintenance of equipment and stores jobs; two-fifths of the 2,740 in maintenance of way jobs; over ~~46~~ 48 percent of those in the transportation services and ~~approximately~~ 30 percent of the total ^W clerical occupations.

The proportion of women in the total force of these 6 systems was approximately ~~40~~ 50 percent above the industry average. Over 21,000 or almost half their women employees, as compared to only one-third in the industry as a whole, were in non-clerical occupations. More than 14,300 or close to one-third of the total, compared to only one-fifth in the industry, were in maintenance of

equipment and stores jobs. In the maintenance of way division the respective proportions on all the 6 roads and the industry as a whole were 2.5 and ~~1.1~~ 2.4 percent, and in transportation (other than yard and train and engine) ~~13.8~~ 13.1 and ~~7.4~~ 10.6 percent.

Extreme variations both in the proportion and the occupational distribution ~~of~~ of the female personnel were found between the 6 roads. On one, for example, only 5.8 percent of the employees were women, and less than 20 of every hundred were in non-clerical occupations. On another 13.6 percent were women and ~~more than 60~~ nearly 40 of every hundred were in industrial jobs. The proportion of women in the non-clerical force ranged from 1.3 to 9.5; In the maintenance of equipment divisions ~~the range was~~ from ~~3.5~~ 3.7 to almost 17 percent; in the maintenance of way from 0.1 to 4.0, and in transportation (other than train engine and yard) from ~~2.2~~ 0.9 to ~~22~~ 21.2 percent.

Additional data obtained indicates that on comparable installations visited women accounted for less than ~~1~~ 5 percent of the industrial force on some and for 25 to 30 percent on others.

Occupational Distribution of Total Female Personnel

The industry-wide occupational pattern described in this section shows the distribution of the female personnel of all Class I roads in the 128 standard I.C.C. Classifications as of mid-July 1944. Many of these groups, as had been noted earlier, especially in the maintenance divisions, are very broad in their coverage, their principal common denominator being the degree of skill and the wage rates of the jobs included. Thus, for example, ~~mechanics'~~ helpers in skilled trades of all crafts are grouped in one I.C.C. classification, and the 3 laborers groups cover scores of different jobs. This data therefore gives only the broad outlines of the women's occupational pattern. The more specific information on the actual nature of the work they were doing is presented in the section on Job Descriptions, pages - - .

In midsummer of 1944 women appeared in about two-thirds of the I.C.C. occupational groups. In the maintenance of equipment and stores divisions they were reported in ~~four-fifths~~ three-fourths of the classifications, but the overwhelming majority were in the least skilled occupations. However, about one-fourth were graded as skilled ~~mechanics~~ trades helpers and small numbers were employed in most of the skilled crafts. In the transportation services on the other hand, about one-third were in occupations that involved considerable responsibility and training, but most of these were of a semi-clerical or semi-administrative character. (see Table — page — for detailed occupational distribution)

Maintenance of Way and Structures Occupations

Women were reported in 14 ~~11~~ of the 23 occupational groups in this division. However, both in the industry as a whole and on the 6 selected roads over 95 percent were in the 3 laborers groups. The balance were employed as construction and building trades helpers; as signalmen or signal maintainers or helpers; as pumping and portable steam equipment operators or helpers, and as carpenters and painters.

Maintenance of Equipment and Stores Occupations

In this division women appeared in all but ~~5~~ 6 of the ~~23~~ 25 occupational groups, but about two-thirds were in the least skilled classifications. In July, 1944 some 11,000 or ~~46~~ 47 percent of the total were classified as laborers, about ~~6,400~~ 6,500, or ~~over one-fourth~~ nearly three-fourths of the total as coach cleaners, and ~~5,250~~ 5,400, or almost one-fourth as skilled trades helpers. Only about 400 were in skilled occupations but some were reported in almost every crafts. Included among these were women blacksmiths, boilermakers, "carmen", electrical workers, machinists, sheet metal workers; stationary engineers ~~and~~ or firemen, oilers, inspectors and foremen of skilled labor. There were also ~~160~~ 156 women gang foremen.

Women were in a minority in all groups - including the coach cleaners, where more than half the employees even in 1944 were men. In the laborers groups their proportion ~~xxx~~ ranged from 11 to 20 percent, and in the helpers group they were 6 percent of the total. However, the ratio of helpers in the female maintenance force was approximately the same as in the male force. ~~Two-thirds~~ More than three-fourths of the total were on the 6 roads in the Bureau survey, and the largest of these accounted for more than half in this group as well as for ~~two-thirds~~ three-fourths of the women in skilled grades.

Transportation (other than train, engine, and yard)

In this division women also appeared in all but ~~3~~ 6 of the ~~13,000~~ 30 standard occupational classes, and ~~almost~~ at least a third filled quite responsible positions. Some 3,800 were telegraphers and telephoners (who handle train orders), accounting for 14 percent of all the employees in these occupations. Some ~~970~~ 1070, or close to 8 percent, were station agents (small stations), ~~with almost half also performing the duties of~~ and telegraphers and telephoners, (this latter forming more than half of these two groups). Other occupations in which large groups of women were employed, in the order of their numerical importance were the various dining and kitchen services - 3,093; the baggage, parcelroom and

station attendants - 1,622; the station warehouse and platform truckers - 1,605; the crossing and bridge flagmen - 672; the laundry workers - 475; the train attendants 183; and common laborers - 146.

Unusual and highly responsible positions in which from 1 to 15 women were reported included: a train ~~dispatcher~~ director; an assistant general foreman; chief telegraphers, telephoners, or wire chiefs; baggage agents or assistants; and transportation dining room inspectors.

The roads in the Bureau survey employed women in most of the above classifications and their proportion in this division was almost twice as large as in the industry as a whole. There were, however, sharp variations between systems. ~~systems.~~

Transportation (yard, train and ~~engine~~)

Over 300 of the 370 women in this division were in the train operating services. More than 200 were ~~classified as~~ assistant passenger conductors and ticket collectors (accounting for almost 60 percent of all employees in this group); 67 were road passenger brakemen or flagmen; 19 were yard brakemen or helpers, and 6 were in the yard firemen and helpers classification. Most of the other women in this division were switchtenders, and 3 were listed as outside hostlers helpers.

~~About~~ More than half the total in these occupations were employed on the roads in the Bureau survey.

Professional, clerical, and general

Some 40,500 ~~women~~ or more than half the ~~total~~ 77,000 women in this division were in the clerks (B and C) classification which includes ticket sellers, but two-thirds of the employees in this group were men. Over 30,000 were in five other occupational groups in which women predominated. These included the office

mechanical device operators, with 7,244 or over 86 percent women; the stenographers and secretaries (A) group with some 2,300, or 62.5 percent women; the stenographers and typists (B) group with 14,656, or almost 85 percent women; and the ~~messengers and "office boys" group~~ telephone switchboard operators and office assistants with 5,436, or 91.5 percent women.

Smaller groups of women were employed in various clerical, supervisory and other occupations involving considerable responsibility or training. Among these were: ~~some 570 women chief clerks of minor departments;~~ 64 chief clerks of major departments; over 240 professional and subprofessional assistants; close to 200 ticket agents and assistants; over 140 traffic and various other agents and inspectors, and over 1,240 clerks (A) and clerical specialists.

Approximately 6 percent of the women in this division were in custodial and other non-clerical jobs.

Side topic

~~In the~~ Executive, Officials and Staff Assistants group only 18 of the ~~4,500~~ 14,600 persons were women. # On this

The wide dispersion of the wartime female personnel in railroad maintenance operations is more clearly indicated in the section that follows, where the type of work that women were actually doing on the roads visited is described.

JOB DESCRIPTIONS

The operations on the installations visited included the whole range of activities involved in keeping rolling-stock, the track systems and other facilities and equipment in condition, and women were employed in practically every ~~subdivision~~ branch of maintenance work. They were on heavy as well as light track, yard, and structures maintenance jobs. They performed a great variety of production and non-production industrial operations in the shops where locomotives and cars were repaired and rebuilt. They worked in the roundhouses where locomotives are checked, serviced and given light repairs between runs.

They cleaned, inspected, lubricated and helped on light repairs of coaches and freight cars in the railroad car yards, and worked on numerous custodial, cleaning and other unskilled jobs in powerhouses, stations, on trains, at terminals, in the stores and other sections where maintenance work was performed.

The descriptions that follow are limited almost entirely as the observations were to women's work in the maintenance divisions.

Maintenance of Way and Structures Jobs

There are few occupations that would normally be considered less suitable for women than railroad track work. Much of it, as is well known, is heavy, rough, requires exposure to all types of weather, is frequently performed some distance from habitable buildings and communities, and in locations where inadequate or no personal facilities are available.

There is, however, some light track, and other maintenance work in the railroad yards, and near terminals and stations which, while not among the most desirable occupations, is not too heavy for women. [4]

Before the war women were generally excluded from this branch of railroad work, and most of the roads visited employed few in maintenance of way jobs. In 1944, 5 had a total of 180 in this division, and only 2 of these had more than 25 women each. The largest road, however, had more than 800 women section and gang laborers.

For the most part these women worked in or near the yards and stations, and were doing relatively light, track dressing, and cleaning work. On some roads however, they also worked in outlying sections, and some were on heavy rail-laying and other "pick-and-shovel" jobs.

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[4] In World War I, after the initial employment of women on track maintenance jobs, the U. S. Railroad Administration, upon the recommendation of its women's section, ordered that those so employed should be transferred to other work. The principal reasons given was that some of this work was too heavy and the surrounding unsuitable for women.

Those doing ~~light~~ the work cleaned tracks at or near terminals, swept around the yards, stations, and other buildings, cut brush and weeds along the right away, cleaned switches, cleaned and filled switch lamps, shoveled snow from platforms, sidewalks and switches, worked as crossing watchmen, and performed other ~~light~~ unskilled cleaning tasks.

Somewhat rougher and heavier work included: loading and unloading crushed stone or other balast; tamping ties by packing balast under and around ties with picks; tightening track bolts and spikes, and leveling out roadbeds.

On two roads women were employed on much heavier work as well. On one, ~~women~~ some who worked in gangs of 8 or 9 (including ~~two~~ 2 men) were laying rails that weighed about 1,000 pounds each; drove spikes and bored holes with a hand machine in rails and angle bars; lifted rails and ties on to trailers, and lifted handcars, on which they rode to and from work, on and off the tracks. All heavy lifting was done by the entire gang.

On the other road, it was reported that in the course of six months, a gang of 25 women raised 7 miles of passing siding, and one mile of yard track, helped lay two miles of 100 pound rails, installed 3,000 ties, leveled stone balast on 8 miles of track, with only the spiking done by men, and loaded and unloaded all the materials and tools used in this work.

~~Only~~ Negro, (as well as Mexican and white) women were reported on the heavy, track ~~replacement~~ (and light maintenance) jobs, ~~but white as well as Negro and Mexican women were doing the less arduous maintenance of way work.~~ Most of those seen, were robust types but this was not always the case. On one road, for example, the woman who was assistant foreman on a track gang, bore closer resemblence to a Fifth Avenue model than to the popular conception of a section foreman. ~~See picture p.~~ .

Women generally worked under the direction of men foremen, although some were ~~the~~ assistant foremen.

Those who worked in outlying sections were within daily commuting distance from their home station.

Only a few women were seen on more skilled ~~maintenance~~ of structures occupations. These included a few painters and helpers who worked only around building; signal maintainers helpers, who wound armatures and performed other semi-skilled work in a signal repair shop, and a carpenter, who did mostly clerical work; ~~plumbers and~~ other helpers ~~who~~ were running errands and doing mostly unskilled work.

On one installation women operated the "Jerry" machine which is part of the district telegraph and fire alarm system. These women received reports at stated intervals from watchmen and policemen indicating fires or any other trouble along the right away, or giving the all-clear signal, and relayed these reports to the proper authorities.

Maintenance of Equipment and Stores Jobs

Before the war, the installations visited employed ~~a small number of~~ few or no women in maintenance of equipment work and restricted them largely to the usual car cleaning, custodial, and similar unskilled tasks. But they virtually barred them from production and equipment servicing jobs in the shops, roundhouses, and yards. In 1943 and 1944, however, women on some of these roads filled a great variety of production and servicing jobs in every branch of maintenance operations, and their work ranged all the way from unskilled window-washing, engine-wiping, and grease-mixing jobs to highly responsible inspection and skilled production operations.

On some installations,

Women were found working in practically every type of shop on production as well as non-production industrial jobs. They were employed in foundries, in tanks, boiler, blacksmith, erecting, electric, Diesel Engine and other machine shops where heavy metal parts for locomotives and cars were manufactured and repaired, as well as in the upholstery, carpenter, cabinet, paint and other shops where lighter repair and renovation work on cars was performed. Some also assisted on light repairs in the yards and roundhouses.

On some roads all, and on others some of the women,
~~A considerable number of those~~ in the shops were helpers to skilled mechanics ~~in every craft.~~ There were women blacksmiths' and boilermakers' helpers as well as helpers to "carmen", carpenters, painters, electrical workers, machinists, welders, coppersmiths, tinsmiths, pipefitters, plumbers, welders and upholsterers.

Some of these ~~women~~ helpers worked more or less independently on the lighter machine and other production operations; ~~other~~ the majority were assisting male ~~mechanics~~ machinists and were under the continuous direction and supervision of these skilled workers.

A considerable number of the helpers, as well as women in laborers classifications, were doing unskilled work such as: bringing tools and parts to mechanics; cleaning rolling stock, parts, tools, work-benches and shops, sorting and cleaning scrap, and performing numerous other essential but completely unskilled tasks.

Most of the installations had only a few or no women on skilled production work. On the ~~one~~ road reporting an appreciable number on skilled maintenance jobs, they were not apparently all-round mechanics in their crafts. However, since this was the only road that found it practicable to use women on skilled production jobs, the nature of the work these ~~women~~ were doing will be described separately in this section.

Semi-Skilled and Unskilled Production Work

Women helpers who were on machine production jobs operated electric drills, radial drills, drill presses, electric grinders, various types of lathes, pipe-cutting and shaping machines, bolt-cutting and threading machines; metal-cutting shears, magnaflux machines, do-all and other electric saws, and assisted skilled mechanics on numerous other machine production operations.

In a number of blacksmith, forge, boiler and tank shops they operated various types and sizes of steam hammers , (up to 3600 pounds in weight), and formidable steam presses(up to 150 ton in weight) used for forging metal parts of locomotives and cars. 1/ Other women in these shops held dies and sledges under hammers, swung sledge hammers that weighed 4½ to 10½ pounds, and were shearing and putting welding compounds on metal materials, and performed many other production operations.

In some of the abovementioned and other metal working shops, women operated forges; heated picks, rivets and bolts and passed them to mechanics; helped insulate steam pipes; helped machinists on switch points, helped make springs; ground rough edges off castings with pnuematic grinders; helped riveters with small rivets; repaired, renovated and produced spring pad lubricators; worked on traction motors; assisted pipefitters and coppersmith clean and wash the locomotive boilers and pipes; assisted men on heavy wheel production jobs; and cleaned and painted axles, journals seats and wheels (On one installation an all-woman crew was employed in the spring-pad lubricating shop on production jobs, and in one shop all the wheel painting was done by women.)

In one erecting shop women who assisted on reassembling operations installed burners, plug valves and blow-off cocks; helped with the wheel shoes, wedges and frame work; washed out plugs and brackets, scraped frames, pipes, fireboxes, cylinders, and door lubricators; checked blue prints, kept book lined up, and worked as tool room attendant.

1/ (See next page for foot note.

Footnote for page 23

[2] These are not arduous jobs. The women sit most of time and the power driven controls are easy to operate. Some foremen estimate that it took about a month to train a woman to become a good steam hammer operator.

In some of the electric and Diesel Engine shops women did underneath and inside inspection of cabs, tested controls in cabs, worked on airbrakes, scraped, painted and flushed batteries, polished fuses, inspected underneath cars for loose bolts, and performed a variety of unskilled tasks.

In two wheel shops women were found working both on light and heavy production jobs. In one they cleaned axles and journals and painted all wheels. In the other a number assisted men on heavy wheel and axle production operations. With the aid of an electric hoist some of these women picked up heavy axles (750 pounds in weight) and transfered them to a burnishing machine where they smoothed the axle ends with a burnishing wheel. Others who worked at the wheel press marked the center of the axles, and helped push the new or repaired wheels on it, operated the air jacks, and helped roll the finished wheels out of the shops (wheels weighed up to 2500 pounds). In the yard of this road women also helped remove and put on these heavy freight car wheels. (It was reported that 2 women and 3 men working at the wheel press were doing the same work as 5 men did previously.)

Women helpers and laborers who worked in the xxxxxxxxxxcar and car shops and yards performed numerous lighter operations (in addition to some of those described above) On most installations they scraped the interior of cars, and washed and cleaned ceilings, walls, windows and fixtures before and after painting: in some of the truck and passenger shops they performed light repairs. In the upholstery shops they glazed, dry-cleaned sewed and nailed coach seat covers, made shades for car and cab windows, and in some cases the heavy curtains that go between car platforms. Some In the passenger car shops some stripped dining car equipment, inspected and repaired air brakes;

Scraped and cleaned car frames for painting, putties outside of cars, did brush and spray painting; repaired parts of equipment and machines; put protective oil on disassembled equipment; sorted metal scrap and cleaned it in hot oil; did the lye vat cleaning and did bench cleaning of glass and small parts. In one freight car department women also helped on a Cincinnati press brake, and in this as well as other shops they performed a great variety of other semi-skilled and unskilled tasks.

In most shops and yards women lubricated rolling stock, made lubricating rolls and checked, packed and oiled journal boxes. One of the most skilled jobs was performed by 2 women oilers in a Locomotive and Crane repair shop. These women were responsible for lubricating 60 different pieces of equipment. They kept involved records of servicing; called in the equipment whenever the records indicated that any piece needed oiling; and lubricated completely each unit without any supervision. The foreman in this shop claimed that these women were able to do all this work after 3 months training, and that they were as dependable as any man previously employed.

Both in the car and Locomotive repair shops women worked as tool-room attendants, generally handling the lighter supplies.

All roads had women turntable operators, on a number they also operated the transfer tables on which locomotives and cars are moved in and out of shops or from one set of tracks to another.

The endless variety of other tasks, requiring little or no skill, that women were doing included: chipping caked dirt from locomotives and cars; steam-cleaning moveable parts of locomotives with powerful hose spray; cleaning air brakes, bearings for journal boxes, gaskets , valves and other small parts; painting steam pipes, and car windows; mixing asbestos and placing it in molds (with bare hands); disassembling and sorting old hardware , lighting fires under locomotive boilers; pouring sand into sandboxes on top of engine boilers; holding stencils for ~~stencilling~~ markings on cars; washing paint brushes pails and stencils; cleaning shops, roundhouses, powerhouses, work benches, machines and tools; carting supplies in wheel barrows; putting oil in motors ; filling radiators; tagging locmotive parts when engines were disassembled, And helping on numerous other operations.

~~All roads had women turntable operators, and on a number they also operated the transfer tables on which locmotives and cars were moved in and out of the shops or to different tracks.~~

Women's Skilled Production jobs

The normal railroad requirements for admission to skilled maintenance occupations is a 3 to 5 year apprenticeship in the course of which every phase of the work involved in a craft is learned. However, due to critical shortages of skilled workers during the war, these requirements were gradually relaxed, until helpers with as little as one year experience could be admitted for the duration ~~basis~~ to skilled jobs. On some installations it was found that -----

(continue paragraph next page)

male employees were generally advanced to such work under these modified provisions. Women, however, were in effect excluded from skilled operations on most roads, although in the railroad shops, as in other heavy metal working establishments, there are some skilled operations that are not too heavy for them.

The descriptions of women's skilled work that follow are based primarily on the information secured from one road which had a substantial number in skilled maintenance occupations. While these descriptions do not cover all the work the women were doing, they do indicate the type of operations on which it was found practicable to use them.

It should however again be noted that these women were not apparently all-around mechanics in their respective crafts. But this was doubtless also true of many men admitted to skilled occupations during the war.

Boilermakers:- Two women reported in this classification were doing primarily electric welding of locomotive boilers, tubes and fireboxes.

Carmen:- The majority of about 30 women who were in this classification were employed on freight-car repair work. They trimmed within cars, did riviting and grinding, repaired air-brakes, and did such other work as fixing running boards and floors. Several who were listed as carmen-welders worked in a steel car shop and did electrical welding of castings at furnace.

Car inspectors:- About two-thirds of more than 50 car-inspectors did general freight-car inspection (except closing of car doors, hopper and similar heavy work). One-third were doing general inspection of passenger cars. Some inspected only air-brakes. Some also repaired air-brakes and made other light running repairs.

Insert from p. 28

Electricians:- The majority of more than 70 women in this classification were in one shop where they wound armatures, operated cranes, and charged batteries. Other women did regular cab-signal testing and repairing in a running

repair section, inspected electrical equipment on incoming steam locomotives; connected and disconnected motors and transformers; inspected motors, motor generators, switch groups, transformers, lights and pantegraphs in a car shop. Some were drilling and placing freight cars, and others did electrical bench work.

Machinists:- The work performed by about 100 machinists included: light bench work as well as various machine production operations. These women operated milling, slotting, borring, travel~~l~~graph and ~~M~~agnaflux cutting machines; engine, turret and other lathes; a radial control press, drill presses and shapers. Some ~~of these female machinists~~ did undercutting of commutators and ~~magantic~~ magnetic testing of axles, some made repairs on steam-heat connectors, air-brakes, and air-brake cylinders, reservoirs, oxygen and acetylene equipment. One was a bolt inspector in an erecting shop.

Painters:- A number of women employed in this classifications did spray painting and rough brush work.

Pipefitters:- Did only light work such as repairing leaks and fitting up pipes.

Sheet metal workers and tinsmiths:- Made up forms and did various light tinsmithing work.

Upholsterers:- Were employed mostly on power machine sewing jobs, and were making coach seat covers and curtains for cars. (This is the ~~only~~ principal skilled occupation in which a few women were employed (on other roads, and the only one that was open to them) before the war).

Welders:- Did mostly magnaflux testing of locomotive parts.

Crane Operators:- Women crane operators were employed in a number of shops. In one erecting shop 2 women directed 15-ton overhead cranes used on locomotive repair work. (Some women also operated cranes at piers, loading and unloading cars.)

Transfer to p. 27

Locomotive Servicing or Roundhouse Work

The roundhouses, or enginehouses, have been aptly described as "the stable of the Iron Horse". For here locomotives are inspected, cleaned, lubricated, given light repairs between runs, and prepared for their next run. Some of this engine "grooming" work is light enough for women, but much of it is grimy, and the surroundings are rough. In peacetime only men generally worked in the roundhouses. At the time of the survey, however, all roads had women in the round-houses on engine cleaning and servicing work, as turntable operators, and in some cases on light repairs.

Most of these women were doing unskilled work. They cleaned locomotive cabs, windows and headlights, wiped engine jackets (some climbing on top of locomotive), and cylinders, filled oil-tank boxes, lanterns, and rod cups, worked as sandhouse attendants (climbing ladders and filling sandboxes on locomotive boilers); dispensed oil, and did such other simple work as filling small cartons with chemicals used in boilers for keeping water from boiling over.

Some women also lubricated and ~~some they~~ diesel engines; checked the water in the boilers by testing and recording results; lit fires under the engine boilers to start up steam; handled water hose for filling the tenders (in which fuel water and oil for locomotives are carried); cleaned locomotive main rods and side rods for Magnaflux testing, and packed cellars.

On a number of installations a few women worked as "engine supply men" and were responsible for checking and supplying each locomotive with a complete set of tools and other equipment that engines must have before they are taken out on a run. This was rather responsible work, since the equipment for each type of engine differed somewhat, and the women had to see that every locomotive was properly supplied before it left the roundhouse. In some roundhouses women also assisted in running repairs, and in one they helped set tires, fit driving boxes, and assisted in laying off shoes and wedges. All 6 systems employed women as turntable operators in the roundhouses.

Car Cleaning and Servicing Work

All cars are cleaned and serviced between runs in the car yards as well as at main stations en route. This work involves not only sweeping, cleaning, and washing floors, seats and windows, but includes also thorough overhauling of the interior and exterior of cars, as well as the inspection and oiling of journal boxes, the checking and replacement of electrical and other equipment, the provision of ice, linen and other supplies needed in transit.

Car-cleaning is one of the industrial occupations in which women were employed before the war. However, men always predominated in this work, and even in the summer of 1944 more than half the "coach cleaners" in the industry were men. However, on most of the roads in the survey, the majority of the workers in this classification were women. In addition, many women laborers and some of the helpers who assisted on repair and renovation of cars (as previously described) were doing essentially car cleaning work.

Women employed as coach cleaners, did both inside and outside cleaning on most installations. The inside work included washing car walls, ceilings, windows and fixtures; dry-cleaning and vacuuming upholstery; sweeping and mopping floors and thoroughly reconditioning the interior of cars. The outside work consisted of washing cars first by hose with a special solution, then scrubbing them thoroughly with long-handled stiff brushes, and finally washing them with clear water, and wiping off windows. On some installations women did the entire outside job. On others men did the hose washing, and women followed up with the brush scrubbing.

Women also serviced cars with ice for air conditioning and drinking fountains, supplied linen and other equipment needed in transit.

Women laborers cleaned freight cars, and cleaned and supplied cabooses. This work includes washing caboose floors and ceilings, and supplying them with coal, ice, water and flagging equipment and firing caboose stoves. Helpers and

packed,

laborers checked, and oiled journal boxes.

Coach cleaners who had been advanced to electrician helpers, checked air-condition equipment, light fixtures, plugs and bell systems.

Stores Jobs

In the stores sections women were doing largely unskilled work, some of an industrial and a semi-clerical nature. Some kept storerooms and stock in order, issued supplies, delivered materials to and from cars to cabooses, to roundhouses and other sections, others were loading, unloading and stacking lumber, sorting and cutting iron scrap; dispensing oil, cleaning lanterns, filling grease guns. On one installation a woman who worked as asssitant to a receiving clerks, checked materials in and out of freight cars. Another who was assistant to a sectional storekeeper, handled only the lighter supplies - such as bolts, nuts, washers, etc., and a third who was a shipping assistant, was doing ~~semi-clerical~~ laborer's work.

Miscellaneous Jobs

On all roads women were commonly employed as matrons, janitresses, messengers, cleaners, sweepers, laundry workers, and similar "housekeeping" jobs.

Very little information was secured ~~on the securities~~ about the responsibilities of those in industrial supervisory jobs, but some were employed as foremen and assistant foremen. On one installation, for example, a Negro woman who was considered exceptionally capable and was well liked, was a labor foreman and had both a man and woman assistant. On this installatinn there were also 15 head women in ~~each~~ the yard, each supervising 12 women. This road also had a Mexican women classified as a labor foreman, but she was actually a counselor for Mexican workers and did not supervise their work.

A number of installations employed women as yard clerks, and in other industrial clerical and semi-clerical positions normally filled by men. These included women train-crew callers and dispatchers, car checkers, clerks who made up interchanges between roads and took car orders from different roads and distributed them to the yards, and other clerical workers whose jobs involved considerable responsibility.

Incidental information on the work of women in the transportation occupations, secured on one large road indicated that:

1. None of the women in the telegrapher, telephoner and towermen classification were towerman. ~~(However it is known that some women towermen were employed on another road).~~
2. Those in the "caller's loaders, sealers, scalers..." classification were only callers.
3. Women baggage and parcel room attendants checked baggage, and handled identification tags, ~~but did no heavy lifting~~.
4. Women train attendants were mostly trained nurses.

Conclusions

The overwhelming majority of women both in the helpers and laborers classifications were doing unskilled work, or were on jobs that required little training or skill. But sharp variations were found in the employment practices of different roads. Some restricted women entirely to the ~~unusual~~ usual cleaning and personal service jobs, while on others they were found in practically every type of shop on a great variety of machine and other ~~new~~ production and equipment servicing jobs.

For the most part, the work women were doing did not involve too heavy weight lifting or other excessive physical strains, although many jobs were dirty, grimy and wet and coach cleaning was wet work and rough. On all installations, however, there were many suitable jobs either unfilled or filled by men on which women could have been used to ease the wartime manpower shortages. In some cases it was found that such jobs were

filled by old or handicapped male employees whose seniority entitled them to available light work, and whose general knowledge of railroad operations was of definite value even on relatively unskilled jobs.[5] Other reported factors that limited the employment of women on suitable work included: objections from male employees and their wives(!); prejudices against women on the part of male supervisors; failure to modify antiquated hiring and other personnel practices to facilitate the entrance of women into industrial work; and, of course, labor shortages and availability of better paying jobs in other industries.[1]

One road, for example, reported that a decision was made against employing any more women flagmen because "too many letters came in from ~~flagmen~~ trainmen and ~~their~~ wives of trainmen objecting...." On another, a woman supervisor stated that prejudice against women among male supervisory personnel was partly responsible for the high turnover rate among them women. On a third, it was reported that men employed in the shops voted against admitting women to certain light skilled jobs, although union officials favored their employment on such work. On ~~one of the~~ a large road, that was trying desperately to increase its female force, few or no adjustments had been made in antiquated hiring procedures that accounted for the loss of many prospective employees.

~~1/ The War Manpower Commission in one of its Labor Market Information industry series stated in 1944 that "Non-operating employees constituting the great majority of railroad workers, earn less than workers in comparable occupations in other industries. Skilled railway and shop craftsmen earn less than employees with the same skills in metal working plants; and track laborers start at 46 to 55 cents an hour, far below the entrance rate for other industries..."~~

5/ Practically all railroad collective bargaining agreements have a "faithful service" clause which provides that old or partially incapacitated workers should be given preference in the assignment of light jobs. These clauses generally specify that "Employees who have given long and faithful service in the employe of the company, and who become unable to handle heavy work to advantage, ~~shall~~ will be given preference in the assignment of such light work in their line as ~~can be arranged for and which~~ they are able to handle."

ALPHABETIC LIST OF OCCUPATIONS IN WHICH WOMEN WERE EMPLOYED ON SIX SELECTED ROADS 1/

Occupation

Attendant
- Baggage room
- Engine supply house
- Grease room
- Linen room
- Office
- Oil house
- Sand house
- Stores
- Tool room

Cashier

Checker
- Cars
- Commissary supplies
- Stores
- Yard

Claim agent, freight

Cleaner
- Coach
- Engine
- Freight cars
- Shops roundhouses, powerhouses, (laborer)

Clerical Workers
- Billing Clerk
- Car record Clerk
- Chief Clerk (minor department)
- Chief Clerk (major department)
- Chief, Pass Bureau
- Clerical specialists
- District Passenger Office Clerk
- File Clerk
- Information Bureau clerk
- Interchange Clerk
- Mechanical Office Device operator
- Repair records clerk
- Secretary
- Statistician
- Stenographer
- Tariff distributor
- Telephone Switchboard operator
- Ticket clerk
- Timekeeper
- Tonnage clerk
- Transportation clerk
- Yard clerk

Occupation

Cook (restaurant, section gang car)
Counselor (for Mexican Nationals)
Crew Caller
Crew Dispatcher
Crossing Flagman
Crossing Watchman
Draftsman
Engine Supplyman
Engine Wiper
Engine Watcher
Firelighter
Gang Foreman(coach yard, skilled labor)
Gang Foreman(Assistant (coahh yard, trad

Helpers
- Blacksmith
- Boilermaker
- Carman
- Car oiler
- Carpenter
- Coppersmith
- Counterman (stores)
- Electrician
- Machinist
- Molder
- Painter
- Pattermaker
- Pipe Fitter
- Plater
- Plumber
- Portable Steam Equipment
- Signalman
- Upholsterer

Ice Bunker--for air conditions
Janitor
Journal Box packer and oiler
Kitchen Workers

1/ This list included only occupations reported on installations visited by Bureau agents. Since the survey was restricted primarily to maintenance operations; it contains only a very limited coverage of clerical and transportation occupations.

To foot of next page.

Occupation
Laborer
Air Room (shop)
Automatic Control Equipment Shop
Boiler shop
Erecting shop
Extra gang (track and roadway)
Locomotive shop
Machine shop
Maintenance of way (other than track and roadway)
Passenger car repair shop
Powerhouse
Roundhouse
Section (track and roadway)
Sheet metal shop
Spring shop
Station warehouse and platform
Stores
Tank shop
Wheel shop
Yard
Laundry workers
Lead Laborers
Matron
Messenger
Oiler (cars, locomotive, other equipment and parts)
Operator
Bolt threading machine
Bolt cutting machine
Boring machine
Crane (shop-overhead, pier loading)
Crimping rail anchor
Drill (press, radial, others)
Grinding machine
Lathes (turret, burnishing, engine, others)
Magnaflux machine
Milling machine
Motor vehicles
Paint spray gun
Pipe-cutting machine
Punch press
Radial Control press
Saw (do-all)
Steam Hammer
Sewing machine
Shaper
Sheet metal cutting shears
Slotter machine
Transfer table
Turntable
Travelog cutting machine
Passenger Traffic representative
Professional and subprofessional Assistants
Rivet bucker, heater
Rodman
Secretary
Secret service operative
Sectional storekeeper assistant
Skilled Mechanics
Boilermaker
Carman
Carpenter
Inspector (Freight and Passenger cars, air brakes)
Electrical worker
Machinists
Painters (rolling stock, buildings)
Pipefitters
Sheet-metal worker
Tinsmith
Upholsterer
Welder
Sectional storekeeper
Sorter (freight department)
Sorter scrap iron
Station agent
Superintendent's asst. in charge of student telegraphy program
Supervisor, Women's (District)
Supervisor (Reservation Bureau)
Sweeper
Telegrapher
Telegrapher, student
Ticket agent
Ticket agent learner
Ticket Puncher, gateman
Tractor driver
Waitress

Insert footnote from p. 34

Women's POST WAR EMPLOYMENT OPPORTUNITIES

The railroads will doubtless reduce their female force after the war, but a number of current factors, as well as development after World War I indicate that the cut may not be very sharp in the immediate post war period. Although long range trends do not indicate ~~many~~ extensive employment opportunities for women in railroad industrial operations, they seem to point to an increase in customary occupations as compared to prewar levels. But the determining factor in current as well as long-range trends will, of course, be the over-all level of employment on the railroads ~~and~~ as in other branches of the nation's economy.

In this respect the immediate outlook on the railroads is very favorable. This industry will not have any "reconversion" problem. It has a huge back-log of maintenance work which can begin as soon as materials are available. This together with the demobilization and industrial transportation requirements will doubtless keep employment on the railroads high for some time after the war.

While this post-war level is not likely to be high enough to absorb both the wartime force and the returning veterans, there are a number of factors that should enable a considerable number of women in the maintenance divisions to hold on to their jobs: ~~1~~/ 6

1. Many have the same seniority protection as men, and a considerable number have greater seniority than their civilian male competitors who entered the industry during the war.

2. A large proportion are on unskilled low paying jobs, which are not likely to be claimed on a seniority basis unless prolonged and serious unemployment develops.

3. Many of the younger veterans who were in low paid jobs will probably not return to the industry, since normal upgrading and promotion on the railroads is very slow.

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6 ~~1~~/ The War Manpower Commission ~~estimates at the beginning of 1944 indicated that~~ states that by July over 300,000 railroad employees had entered the armed forces.

Some cuts in the female force during the immediate post-war period, however, are indicated in the findings made on reporting roads, although the ~~ex~~ extent could not be estimated. A number of cases were reported, for example, where women were removed from roundhouse and maintenance of way jobs, and this substitution will doubtless be ~~excellerated~~ accelerated. The position of women on actual production ~~jobs~~ operations in the shops seemed relatively insecure. A large proportion of these women were employed on a road where all women hired during the war were classified as temporary employees. In most other cases actual production operations were performed largely by women "helpers," and since rates in this classification are relatively high, such jobs are much more likely to be claimed by men on a seniority basis. Voluntary quits among women on heavy and rough jobs have been considerable and may be expected to continue. ~~And~~ An unknown proportion will, of course ~~lose~~ lose their jobs because of short seniority on the employing roads.

Employment trends following World War I show that although very sharp reductions were made in the female force of some divisions, in the immediate postwar months their proportion in ~~non-clerical occupations~~ other divisions remained relatively high for some time after the war. Because these developments may throw some light on possible trends in the present post-war period, and because they illustrate how closely women's opportunities in this industry are linked to the over-all employment levels, they are briefly summarized here.

In the year following the 1918 armistice a 20 percent cut was made in the railroad female personnel, but in 1920 when total railroad employment mounted above the 2 million mark ~~10,000~~ more than 8,000 women were again added to the force. Thus two years after the war, the railroad female personnel was only a little more than 10 percent below the wartime peak, ~~and~~ but the average number of women workers in these two peacetime years was actually ~~10,000~~ 15,800 below the 1918 average. From 1920 to 1926, the total railroad force was cut by a quarter of a

million and the female force by about one-third or to 61,000. In 1930, when railroad employment dropped to about 1½ million, 55,000 women remained in the industry. By 1940 when employment dropped to 1,100,000 only about 36,000 women were left. ~~1/~~ 1/

While the total decrease in this period was considerable, it should be noted that in ~~the spring~~ October of 1926, ~~more than~~ 7 8 years after the armistice, there were almost twice as many women on the roads as in January 1917 (estimated at 31,400 by U. S. Railroad Administration); and even in 1940 their proportion in the total force was twice the pre-war level. total was larger and their (about) of World War I

However, although the proportion in the usual clerical occupations remained consistently above prewar levels, the number of women in the combined maintenance and transportation occupations dropped sharply; in the latter part of 1918, 1919, 1926 and 1942 totals in such occupations were approximately 27,000, 15,000, 9,000, and 5,600, respectively.

The extent to which development in the current post war period will follow the above described pattern, cannot be accurately determined at this writing. But even if employment of women should continue at a fairly high level for some time after the war, a future contraction in the railroad ~~labor force~~ personnel seems inevitable, and women will, of course, be among the first to feel the effects of any substantial reduction. Factors indicating this development include: Growing competition from other forms of transportation; continuing technological and other labor saving devices, and an increasing trend toward locating industries as near consuming markets as possible.

1/ ~~1/~~ 1918, 1919, 1920, and 1926 figures are for Class I steam roads only, the 1930 and 1940 figures are based on U. S. Census reports, and include all workers claiming railroad employment.

WORKING CONDITIONS

Employment conditions on the railroads are almost universally governed by the provisions of collective bargaining contracts, and on most reporting systems the basic employment standards specified in the agreements covering maintenance and clerical workers applied uniformly to men and women.[8] This reflected the policy of the respective national railroad unions, who early in 1943 recommended to their subordinate units not to make any agreement that would allow lower standards for new employees--men or women.[9]

It should be noted, however, that this "equality" standard had negative as well as positive aspects. While it gave women the same employment standards as men, it also generally deprived them of any special consideration in such matters as choice of shifts or most suitable jobs.

In addition, certain forms of sex discrimination were reported which were not technically violations of standard contractual rules,

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[8] No adequate data was obtained on contracts covering transportation employees.

[9] Railway Employees' Department, American Federation of Labor, Circular No. 1177, February ~~28~~ 10, 1943.

Seniority Rights

Among the most valued employment standards of railroads workers is their seniority system. Seniority, or length of service is the basic factor in determining the order of promotion, upgrading, transfer, layoffs, and rehiring, as well as the right to preferred jobs, shifts or runs, on all railroads. This seniority system had its origin on some roads at the beginning of the railroad era, and reached universal adoption with the complete unionization of the industry. To the workers, it is a guarantee against discrimination and favoritism; to the industry it assures a large corps of experienced workers, thoroughly conversant with railroad rules who are essential to safe operations. [1] 10

Women, as well as men, have benefited from seniority on railroads. This is indicated partly, in the U. S. Census data on the age distribution of the industrial population. These data show, for example, that even in the 1930-1940 decade when competition from younger workers was very great, the older women in railroad employment were more than able to hold their own. In 1930, for example, only about one-third of the 55,000 women in railroad employment were 35 years or over, but by 1940 more than two-thirds of the 36,000 were in this age group, and 12,000 as compared to only 7,000 in 1930 were 45 years old or over.

During this war most of the National railroad unions opposed any limitations on the seniority rights of new employees--men or women. In an official circular to their subordinate units these unions recommended early in 1943 that "..No special agreements should be made for new employees, limiting the seniority or any other rights of such employees."

1/ Most railroad workers begin to accumulate seniority from the day their pay starts. Some of those in laborers' classifications, however, do not begin to acquire regular seniority until 60 days after they're employed.

On most reporting roads it was found that the unions representing maintenance and clerical workers generally enforced this policy. Women were admitted into the maintenance and clerical jobs as permanent employees and had equal protection with men of all the standard seniority rules. They did not however, benefit equally with men from some of the wartime relaxations. The principal form of sex-discrimination found in this respect was the general practice of excluding them from skilled maintenance jobs for which some could have qualified under the relaxed wartime provisions, (although not under the peacetime regulations.)

Another serious form of sex discrimination was found on one road which had a collective bargaining contract with an independent union representing maintenance workers. This road had a wartime agreement under which all the women hired during the war (and men over 45) were classified as temporary employees. But on this road, too, women had equal seniority with men while in service. [1] The agreement with this union also specified that men could be requested to relinquish light jobs to women, regardless of their normal seniority right to such jobs.

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[1] This agreement specified that women employed after a specified date in 1941 "Will be considered temporary employees" and .. "shall acquire and may exercise seniority in accordance with applicable provisions, but shall only retain such seniority during the period of the present national emergency."

Wage Rates

Rates in the railroad industry are based on the job classification, not the sex of workers. This practice dates back to the close of World War I when the United States Railroad Administration issued an order requiring that where women are employed"... their pay, when they do the same class of work as men, shall be the same as that of men." In peacetime and during the present war this job-rate principle has been preserved under the collective bargaining agreements that are almost universal in the industry.

Agreements covering laborers, as well as those covering clerical, semi-clerical and custodial employees who are under the jurisdiction of the railway clerks union, contain provisions modeled after the World War I equal pay order, which generally specify that "...the pay of ~~female~~ women employees for the same class of work shall be the same as that of men."

The shop craft union agreements, which cover skilled shop mechanics, their helpers, the apprentices and the coach cleaners, do not ~~generally~~ usually contain this specific clause, but in these too, all rates are based on ~~their~~ skill or craft, not sex.

Since the job classifications in this long-organized industry are considerably standardized, and women, in the industrial occupations are not segregated into special occupational groups or departments, there is little likelihood of by-passing this equal pay or job rate-policy by creating special classifications for women.

During the present war the railroad unions have stressed the importance of preserving this job-rate principle in various organizational memoranda. In ~~January~~ February 1943, for example, a circular letter sent out by the Railway Employees' Department, (AFL) and bearing the endorsers' approval of the Railway Labor Executives' Association recommended to all General

Chairman and field officers of the unions that where women are employed ..."no lowering of existing standards or differences in rights or compensation should be agreed to. Equal treatment is essential regardless of sex."

No violation of this job-rate policy was found on any of the systems in the Bureau survey. Women in all cases received the same rates as men who predominated in every occupational classification.

Occupational Rates

Since the survey was primarily concerned with the employment of women in maintenance operations comprehensive data were obtained only for those classifications in which the majority were employed--that is: for the maintenance of equipment, and store laborers, helpers and coach-cleaners groups. No adequate data were secured on rates of maintenance of way laborers, who are among the lowest paid in the industry, but all systems reported that they had no sex-wage differentials in any branch of operations.

Most of the wage data was obtained before the general wage increase of 1944 was granted to non-operating employees. However, since this increase was retroactive to 1943 the rates both before and after the increase will be indicated in this section. The regular hourly increases plus the additional adjustments allowed in the 1944 wage order resulted in a total rate increase of:

11 cents on hourly rates under 47 cents
10 " " " " of 47 and under 57 cents
9 " " " " 57 cents or over

Laborers' rates on reporting roads ranged from 51 3/4 to 60 cents in 1943, and from 61 3/4 to 69 cents after the wage increase. One road provided a 3 cent increase after 3 months of service, bringing the maximum in this classification up to 72 cents.

Coach cleaners rates ranged from 55 to 60 cents before and 65 to 69 cents an hour after the increase.

Lead women generally received 5 cents above the going rates.

Rates of skilled mechanics' helpers ranged from 63 to 73 cents before and from 72 to 82 after the increase. One road reported an automatic one cent hourly raise after the first and second year of service, bringing the maximum for women in this classification up to 84 cents in 1944.

On most roads all helpers, regardless of their craft classification or the actual character of their work received the same rate. Only on two roads were a few minor exceptions to this rule reported. More frequent variations were indicated in laborers rates, but the range was extremely narrow, and in no case exceeded 4 cents an hour.

Women in skilled classifications received as high as 95 ~~to 99~~ cents an hour in 1943 and 9 cents more per hour in 1944.

Among the lowest paid women were the messengers, whose ~~daily~~ rate ranged from $3.68 to $4.~~56~~ 68 a day in 1943; matrons, and sweepers who, in some cases, received less than 55 cents an hour and a store attendant whose beginning monthly rate was $60, and the maximum after 3 years of service was $71.

Reported rates for industrial clerical workers ranged from ~~$6.15~~ 3.68 in 1943 to $7.~~12~~ 46 per day in 1944. Flagmen on a road where women were employed in this occupation received $7 to $8 a day.

Wage Advancement:

There is relatively little wage advancement on the basis of length of service in the Railroad Maintenance Divisions. The chief exception to this rule is in the apprentice group, But only a couple of women were classified as apprentices at the time of the survey, ~~and none were indicated in later 100 reports~~.

The principal form of wage advancement available to women in industrial occupations was through upgrading from laborers to helpers classifications. The rate differential between these two classes on 3 reporting roads ranged from ~~16~~ 16½ to 19 cents per hour. As is evident from these figures, promotion to a helpers grade represented a substantial daily and weekly wage increase.

Shift-rates

Although in many industries shift differentials are paid even in departments that regularly operate on a three shift basis, this is not the case on the railroads. None of the reporting roads had shift differentials in any departments employing women.

Upgrading

All promotion in the railroad industry, except in some executive supervisory and administrative positions, is based on seniority or length of service. The ~~standard~~ upgrading rule embodied in a number of ~~most~~ collective bargaining contracts provides that: "Promotion ~~will~~ shall be based on seniority, fitness, ability, and ~~seniority;~~ fitness and ability being sufficient, seniority ~~will~~ shall prevail." Under this system qualifying employees with the longest service in specified groups of related occupations ~~or~~ departments, ~~in~~ or a given area - are the first in line for promotion or upgrading.

On most reporting systems women in the maintenance divisions were generally hired in as laborers and advanced to helpers grades, whenever suitable openings occurred, on an equal seniority basis with men. On some installations such openings were frequent, and it was only a matter of weeks or even days before women were upgraded to helpers. On others suitable openings were infrequent and women remained in laborers classifications for months. On two systems none were reported in the helpers grade. Coach cleaners were generally hired in as such and promoted to lead women or helpers.

It is significant to note that in the industry as a whole the proportion of helpers in the female maintenance of equipment force was about as large as in the male force. Another significant point is that upgrading of women to helpers was much more extensive in this than in the last war. In 1918 ~~and 1920~~, for example, only about 5 percent of the women in maintenance jobs were in this classification. In 1944, on the other hand ~~almost 20%~~ 23 percent were in this group.

On ~~the~~ three roads in the Bureau survey with the largest number of women in the maintenance of equipment and stores division approximately one-third, one-fourth and one-fifth respectively were in helpers classifications.

Women were, however, generally discriminated against in upgrading to skilled maintenance jobs. It is true that few could have qualified for a journeyman's grade under the normal rules which require a 3 to 5 year apprenticeship of 290 days each. However, management and labor representatives agreed to drastic wartime modification, and under these modified rules helpers with only two or even one years experience could be upgraded for the duration to skilled mechanics work.[12] On most reporting roads, however, it was found that while men were upgraded under these relaxed provisions, women were generally denied this privilege. Only on one raod were a substantial number found in skilled maintenance jobs. This road however had supplementary contracts under which men agreed to relinquish lighter jobs to women, However, this agreement discriminated against women in another way, it specified that all women hired during the war were temporary employees, and subject to dismissal at any time after the emergency had passed.[13]

Upgrading to gang formen's jobs was proportionately greater than upgrading to skilled mechanics work. Although 3 reporting roads with the smallest number of women employees, had none in this classification, on the other 3 close to 10, 21 and 26, percent, respectively of the gang foremen in maintenance of equipment and stores section were women. This is especially noteworthy in view of the fact that a considerable amount of the literature advising railroads on supervision of women placed undue stress on their preference for male supervisors.

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[12] Such employees did not have to be all-round mechanics in their craft. If they performed any operation rated as skilled mechanics work, they were classified as skilled journeymen for the period that they worked and were paid a mechanics rate.

[13] This arrangement was made with an independent union.

Hours

Scheduled and Overtime Hours

The regularly scheduled work hours in reporting roads ranged from 48 to 60 a week. Most installations of 5 systems were on a 6-8-48 weekly schedule. But on the road that ranked second in the size of its female force all the women in the shops had a 56-hour week of four 10-hour and two 8-hour days. Two installations also reported regular schedules of six 10-hour days a week. (Examination of company records on one, however, showed that in a period of 3 months only nine 60-hour weeks were worked.)

In addition, overtime above regularly scheduled hours was reported on several installations. On one, women in the yards worked seven 8-hour days or 56 hours every other week. Another road reported about half the women laborers working 4 to 6 hours and some as much as 12 hours a week above scheduled 48 hours; and one installation operating on a 60-hour basis, reported that many women worked up to 70 hours a week. Overtime from 1 to 2 hours a day was also reported on other installations.

On most roads work above 8-hours a day was optional, and biding for overtime was on a seniority basis. All time above 8-hours a day or 48-hours a week; work on Sundays, (except for specified groups); work on a seventh consecutive day and on a number of designated holidays was considered as overtime and was paid at one and a half times the basic rate.

Shifts

Since railroading is a round-the-clock business the 24-hour work day of three 8-hour shifts is customary in many railroad departments. But unlike other industries, the railroads do not use rotation of shifts. The customary practice in this industry is to bid for preferred shifts on a seniority basis. Under this procedure available openings are listed

by occupation and shift and qualifying workers with the longest seniority get first choice.

Visited
~~Reporting~~ roads employed women on all shifts. On installations reporting distribution of the female force by shift, the majority of the women were on the first shift. The total number of women on the second shift was about the same as on the third ~~shift~~, but on some installations the total on the ~~last~~ "graveyard" shift was larger than on the second. Women on the graveyard shifts worked in the roundhouses, yards and in some shops.

Part-time work

On none of the reporting roads were any industrial women employed on a part-time basis.

Lunch periods

The lunch periods for women were the same as for men and generally corresponded to the normal contractual provisions.

In most industrial divisions 20 or 30 minutes was allowed for lunch. Where time for eating was taken out during working hours, the period was 20 minutes. When workers ate on their own time they usually had half-an-hour for lunch. Only one exception to this rule was found on an installation where all shop workers had a paid standards 30 minute lunch period.

The collective bargaining agreements in the industry provided that up to 20 minutes, (in some cases up to 30 minutes) should be allowed for eating during the working hours to designated groups of workers or under conditions requiring continuous presence on the job.

On the roads in the survey it was found that where operations were on a three-shift basis, all workers were allowed 20 minutes for lunch during working hours. Some roads where women were only on two shifts, also reported

20-minute lunch periods during working hours, in some cases on both shifts. However, on one road, where the collective bargaining agreement permitted a paid lunch period up to 30 minutes, only one installation allowed that much time to women in the shops. On the other installations of this system women on 10-hour work-schedules ate on their own time--which stretched their day in the shop to 10½ hours, while those on 8-hour schedules in other sections ate within the scheduled 8 hours.

Reported lunch time of yard clerks, other industrial clerical and some store employees ranged from one-half to 1 hour.

Rest Periods

Although none of the railroads had modified their standard regulations to provide formal rest periods for women, most reporting installations had two informal 10 to 15-minute rest periods daily for women on industrial jobs. In one case women who were on 1 -hour shifts were allowed 3-10-minute periods daily, and on another women in the roundhouses had 2-20-minute rest periods (the women in the roundhouse were on strenuous work and said they needed every minute of rest allowed.) On some installations, however, no regular time for rest was designated and on one it was reported that turntable operators had no relief for lunch or rest.

The need for establishing regular rest periods was indicated by conditions that prevailed on some installations of the two largest roads. One of these roads had issued no definite instructions to its administrative personnel on the subject, with the result that some provided for regular rest period, while others did not, and on the installations where no time for rest was designated, there was a great deal of argument, misunderstanding and irritation over this question.

On one installation of the other road, where no formal time for rest was established, considerable dissatisfaction was reported over the amount of irregular time women took out for resting. Management in this instance was considering the establishment of formal rest periods.

TURNOVER AND ABSENTEEISM

Available data on absenteeism and turnover on reporting roads were extremely inadequate. Few installations had regular records, none had a breakdown on the basis of sex or cause, or separated quits from involuntary and military separations. However, on a number of installations special computations were made upon request of the Bureau agents, and these as well as estimates of supervisory personnel indicated that women in most cases had either as good or better record than men. Overall rates, however, were high.

Turnover

Industry-wide data shows an extremely high rate of turnover on the railroads during the war, but indicates that it was ~~considerably~~ lower in the female than the male personnel. Railroad Retirement Board figures, for the fiscal year, 1942-1943 show, for example, about 1 million new entrants in the industry, but a total increase in the labor force of only 120,000 ~~in this period~~, or a ratio of approximately ~~8~~ to 1, and for the fiscal year 1943-1944, 1,100,000, and 85,000 respectively, in these two periods, and 12 to 1.

While no sex breakdown in these figures is available other data indicates that the ratio in the female force was probably less than 2 to 1 in 1942. This estimate is based on the Boards reports which show that about ~~44,000~~ 40,000 women ~~entered~~ were employed on Class I Railroads ~~during~~ in the summer of 1942, and other reports which indicate that in the last 4 months of that year alone the female force on these roads increased by about 23,000. No separate industry-wide figures

Scattered data obtained on reporting roads showed a weekly turnover rates in the total labor force ranging from 1 to 12 percent. No sex breakdowns in these figures were obtained.

for women were available at the time of writing for the 1943-1944 period.

On reporting roads, supervisory personnel on 3 installations estimated turnover lower among women than men, on a fourth it was stated that "women have been quite steady", and on a fifth, that turnover was higher among women than men.

Scattered statistical data obtained for limited periods did not generally indicate a sex breakdown. Those giving separate figures for women showed, however, the highest termination rates ~~for women~~ among coach cleaners and maintenance of way laborers. The lowest rates were reported in passenger car and in other repair shops and among women flagmen.

On two installations 30 and 40 percent respectively of the women coach cleaners terminated their employment in the course of ~~a~~ one month. On two others the termination rate in this group was about 13 and 15 percent per month respectively.

The highest termination rate for shop employees was reported in a locomotive shop where the number of separations (male and female) in the course of a year equalled more than 50 percent of the total force. That suitability of job was a factor in turnover was indicated by the fact that in the passenger car shop of this same road turnover for women was said to be "small". In a shop of another road where 200 women were employed, only one termination was reported in the female force in a period of 3 months. On another installation where several thousand workers were employed in the shops, turnover for men and women was estimated at about 5 percent monthly.

Principal reasons given for high turnover among women coach cleaners was that the work was wet and dirty. Other reasons given for terminations in the female force included: Unsuitable jobs, prejudices of male workers and supervisory personnel, and more attractive wages in competing industries.

On the other hand, on one road where 300 women had been hired for maintenance of way work in the course of a year, only 33 remained at the time of the Bureau visit.

One woman supervisor, for example , thought that high turnover among women on her road was due in part to the fact that foremen discouraged them and she recommended special instruction and training for supervisory personnel to eliminate such attitudes.

The importance of this factor was indicated by results achieved on another road where special steps had been taken to prevent such discrimination. This road informed its male supervisors of the urgent necessity of employing women, before women were hired, and required the supervisors to interview those who seemed dissatisfied with their work, shift them to more suitable work where possible , and make every effort to keep them in service. Very little resentment against women was found in the male force of the installation visited on this road, and turnover was realtively low.

Absenteeism

No regular data on absenteeism were kept on any of the reporting roads, and the persons interviewed were equally divided about the proportion of absences among the sexes. ~~Half~~ Some said there were more absences among men, the other half believed there were more among women. However, on one road where an actual check was made, and where supervisors generally estimated that men had a better record, their absence rate was actually in many cases as high, or higher than in female force. An extreme example was one coach yard where on the day of the visit 60 percent of the men as against 28 percent of the women were absent.

On a number of ~~roads~~ installations where special computations were made ~~by~~ for Bureau agents for limited periods, total absenteeism rates ranged from 10 to 30 percent in the shops and from 20 to 50 percent among all coach cleaners. But these figures may reflect to a ~~very~~ large extent turnover rather than absenteeism, since under the seniority rules it is not possible to clear very promptly voluntary terminations from the payrolls.

While no records were obtained on absences by group, on most roads the opinion was generally expressed that there had been an excessively high rate among coach cleaners, due to such factors as out-of-door work, wet jobs, and poor lavatory and rest room facilities. On installations where no proper work clothing was provided it was impossible for women cleaning coaches to keep dry and colds were prevalent among them.

PERSONNEL POLICIES AND PRACTICES

The Office of Defence Transportation devoted a great deal of attention during the war to railroad personnel problems, and its division of Transport Personnel made numerous recommendations to the transportation industries on personnel practices that would facilitate the recruitment and retention of women in industrial transportation work. However, on most installations visited by Bureau agents few modifications in old personnel practices were found, and this lack of adaptation hampered the recruitment of women (as well as men) in a tight labor market. 14

(18, 19,)

14 O.D.T. Activities in this field included: (1) A conference with management and labor representatives from all transportation services on "Woman Power in Transportation" in March, 1943. (2) An Institute for Supervisors of Women Workers in transportation, October 12,-14, 1943. (3) A study of railroad work suitable for women issued January, 1944. (4) Memorandum on "Practical Hints to Employers of Women with Special Reference to Transportation, October, 1944.

Labor Supply

Most roads reported serious labor shortages, and numerous openings in their industrial divisions in which more women could be used. While practically all installations were in labor shortage areas a number of other factors were reported as contributing to the limited supply of female workers. These included: complicated hiring procedures, requirements to work on late shifts; wage scales below those paid for comparable work in competing industries; rough character of some jobs; isolated location of some installations and prejudices among male workers, and supervisory personnel against women. [15]

Recruitment

Usually workers for non-operating jobs were drawn from the immediate locality and from near points along the line. One of the largest roads, however, reported that it recruited both men and women at any point ~~along~~ on the line for work anywhere on the system. In these cases workers were furnished transportation by the company, but were not guaranteed a job until after the interview at the point of employment. This practice was considered extremely undesirable for most women by the Bureau agent, who recommended that the road make every effort to employ local women whenever possible.

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[15] In two localities difficulties in recruiting workers for the railroads were ascribed partly to relatively low wage rates in this industry. The War Manpower Commission in 1944 also reported that "Non-operating employees, constituting the great majority of railroad workers, earn less than workers in comparable occupations in other industries--skilled railway shop craftsmen earn less than employees with the same skills in metal working plants, and track laborers start at 46 to 55 cents an hour, far below the entrance rate in other industries." Labor Market Information, Industry Series No. 40-1.

The principal recruiting agents and agencies used by these systems were the older employees, the company employment offices, the Railroad Retirement Board and the U. S. Employment offices. Actual hiring was generally done at the shops needing the workers by the foremen or other personnel employees. Recruiting methods used by company offices included: Newspaper advertising; radio, posters and appeals through church and other community leaders. Advertisements usually asked applicants to report at downtown offices. From these they were sent out to the installations where jobs were open.

Hiring

The hiring procedure, on some installations, was relatively simple. Workers applied at the installation office, were interviewed by the foremen, given a physical examination, and those who met the minimum requirements were hired and assigned to their jobs. On others, however, the hiring process was extremely complicated, and hampered the recruitment of both women and men. The worst conditions, strangely enough, were found on a road that reported very serious labor shortages and was trying to make the maximum use of women in industrial operations. This road, however, had made no modifications in its old hiring procedures, which were especially unsuitable for women new in the labor market.

In some large industrial communities this system, for example, required workers to apply first at its downtown employment office. From these, if they had no certificate of availability, they were sent to the Railroad Retirement Board or the U. S. Employment Service to obtain one. When (and if) they returned, they were sent out to the shops for an interview with the foremen and the shops were frequently on the outskirts of the city and not easily accessible. If a worker

was hired by the foreman (at the shops) and there was no doctor present on the premises, she had to go back to the city for a physical examination, and if she passed the examination she reported to work. Extremely wide discrepancies between the number of applicants and the number reporting at the shops indicated that many prospective employees were lost in this complicated shuffle.

Some of the employment offices on this road were also extremely crowded, and poorly laid out, and few women interviewers were employed.

Recommendations of Bureau agents to facilitate recruitment of women on this road included: 1. A simplified procedure that would make possible the clearance of all hiring prerequisites in one visit. 2. Provisions for transporting workers from downtown offices to the shops. 3. More specific information on the nature of the work involved in jobs offered to women. 4. Use of women interviewers, and better laid out offices as a means of easing the entrance process for women, especially those new in the labor market.

Selection

Selection of women on reporting roads was made chiefly on the basis of health and age. In the maintenance division where women were hired mostly for unskilled work, little other selectivity was exercised If an applicant passed her physical examination, and was within the age limit, she was eligible for a job. The final determination, however, was made by the hiring agent, who was usually the foreman, and he generally determined, what work was suitable for the ~~person~~ applicant.

With the exception of one installation, medical examinations were used only to determine general fitness, but not the type of work on which a woman should be used. Those who did not pass the standard physical requirements were simply not considered for any work.[16] The thoroughness of the examinations varied markedly between systems, but in most cases included checking of heart, lungs, distance vision, and blood pressure.

The age ~~limits~~ of those employed ranged from 16 to 65 years for women and up to 70 for men. On half the roads the minimum for women was 18 years and for the more hazardous jobs it was 21. The maximum ranged from 45 to ~~65~~ 60. The great majority as indicated by the survey were in the 25-45 age range. On one of the largest roads where the theoretical maximum was 55 the agent reported that she did not see any women in the shops anywhere near this age. ~~One of~~ This ~~the~~ roads ~~that~~ reported a serious shortage of clerical workers, was turning down women applicants over 45 because this was its formal age limit for new clerical employees.

~~Where we~~ Orientation and Induction

Where women supervisors were present they took new women employees in charge, introduced them to the foremen and other employees, showed them their lockers and restrooms, explained regulations concerning work clothing, safety, lunch and rest periods, and other matters relating to facilities and procedures. In most other cases workers reported directly to their immediate superior, who assigned them to their jobs and gave them the essential information about facilities and other regulations. The adequacy of the workers induction varied with the ability of the person in charge to impart necessary information easily. The entrance of women to ? was new. (OOO)

[16] In other industries studied by the Women's Bureau during the war, notably the Army supply depots, older women and women with minor physical handicaps were used effectively on the lighter industrial operations in areas where labor shortages were acute. No effort to use such women were reported in any of the railroads - although critical labor shortages were reported by most.

Training

Railroads usually train their workers on the job and normally develop their semi-skilled and skilled force through a slow training process, governed by seniority, in the course of which junior employees learn gradually but thoroughly every phase of the work involved in their occupations or crafts. While this process has been expedited during the war, on-the-job training for new workers remained the prevalent practice in railroad maintenance division.

With one temporary exception, all women employed in the maintenance divisions of reporting roads were given only on-the-job training. But off-the-job instructions were provided on a number of roads for women telegraphers, teletype operators, trainmen ticket sellers and other clerical workers.

The exception in the maintenance divisions was one road where a woman supervisor had a number of classes for a brief period in which new women were taught the meaning of repair instructions and the names of ~~parts~~ equipment and tools they handled in the course of their work. These instructions, useful to any workers unfamiliar with industrial terminology, ~~were~~ are of special value on the railroads which have a language almost of their own. However, even this limited course was discontinued because the supervisor who initiated it had too many other responsibilities.

Since women in the maintenance divisions began usually as coach cleaners or laborers, they needed relatively little training in the actual work processes. They received their instruction from foremen or more experienced workers, and were usually placed with older employees while learning their job. Most of these upgraded to helpers jobs, worked under the continuous supervision and direction of skilled employees.

Some cases were reported where women studied outside working hours on their own initiative, but there was little incentive for this in maintenance divisions, since few skilled jobs were open to ~~women~~ them.

In other branches of operations, telegraphy was the most frequently mentioned occupation in which off-the-job training was required or provided. One system reported that it sent its women trainees to a regular school and paid them during the training period which lasted several weeks. Another provided a 6-month training course for telegraphers and reported that upon completion of the course some women were sent to stations where train orders were extremely heavy. On another road a woman, who was assistant superintendent of ~~its~~ the telegraphers department, supervised the training of women telegraphers on company premises, gave them examinations and stayed with them on the job for a time. One road reported that it employed only women who were already trained in commercial telegraphy schools.

Safety, Accidents and Protedtive Clothing

Safety instructions received considerable attention on several reporting installations. One of the largest roads which had a safety department on a system level reported quarterly meetings for supervisors and other key men on safety problems, and weekly or monthly meetings for foremen and workers on company time. Another road, ~~which~~ that also reported weekly safety meetings, had a woman member on the safety committee at each point where women were working.

Workers were generally given printed safety regulations upon employment or were instructed by their foremen in the most essential safety rules. One system ~~reported a number of~~ had different safety books for the various departments, and a regular periodical dealing with safety matters. On one installation films were used occasionally in safety instructions.

No separate accident figures for women were available, but on most reporting installations it was claimed that the majority of women's accidents were of a minor nature with a large proportion caused by falling on wet or oily surfaces. One one installation where women's accident records were analyzed exactly half were caused by falling or slipping. Inadequate yard lighting facilities at night in locations where women had to cross tracks were reported in a number of cases.

Dermatitis was reported as quite a problem for women who washed cars with Oakite solution, and for those on waste reclamation jobs in some installations, but others claimed they had no complaints from workers regarding ~~skin irritations~~ dermatitis. A number of installations reported that they provided protective salves for workers exposed to dermatitis.

On some roads rubber boots, aprons, gloves and goggles were furnished to women coach cleaners, and safety belts to those who wiped down the engine jackets (women engine wipers had to climb up and walk along a very narrow running board and the belt hooked to a rod running along each side of the engine was a protection against falls.)

On seme installations, however, foremen did not think such equipment necessary, and on some of these, women who helped wash the outside of cars got very wet in the course of their work.

All 6 companies, however, reported furnishing goggles on most operations where they were needed. On one where they were provided on 42 different operations, instructions for wearing them (not always complied with) were given to employees at the time the ~~goggles~~ were issued.

Safety shoes were required by three companies on certain jobs, and recommended by others. Special stamps for such shoes were allowed, but only one company took the responsibility for selling them to its employees. Difficulties in securing these shoes were given as reasons for lack of requirements and inadequate supply provisions.

Slacks and overalls were required only on one installation, but these as well as headgear were recommended by all companies, and women were generally wearing them.

Since there is considerable steam, oil greases and water about on most jobs in the maintenance division, women were generally glad to cover their heads with bandanas or caps. Wearing of jewelry was universally discouraged and women apparently complied wholeheartedly. On the whole women complied well with safety clothing regulations except for footwear.

Personnel Counselling

Counselling and other personnel matters affecting women received less attention on visited roads that most personnel experts consider desirable. However 3 of the 5 reporting systems had women "supervisors" on their personnel staffs whose principal responsibility was to advise on matters relating to women's employment, their facilities and other personnel problems. The two largest roads had 3 women each and the third had 1 working in this capacity. These women had jurisdiction over entire divisional areas. Since such railroad divisions in some cases included several industrial installations in a number of communities, the women supervisors were able to visit some only once in 2 months.

None of the roads reported ~~any~~ other women counselors continuously present on individual installations, although some may have been employed. ~~On some it was found that~~ Cases were reported where lead women and women classified as foremen handled personnel problems other than those relating to the job functions. On one road, for example, a Mexican woman foreman assisted Mexican nationals with such problems as housing, transportation and rationing. But few other ~~cases~~ instances of regular counseling on a local level were reported aside from that given by the division supervisors when they were present ~~on~~ at installations.

The functions and duties of most women supervisors were not clearly defined. All reported that they advised and were, or expected to be, consulted on all matters relating to personnel problems of women. Apparently plant supervisors were not always informed of the exact functions these women were to have and this in some cases limited considerably their activities and influence.

One woman supervisor stated that she succeeded in establishing a good relationship with departmental supervisors, and was consulted on problems arising in relation to women in these departments. On this road one of the supervisors had authority to hire women when she was at the main office, and assisted with the induction of women when she was present at the installations. One of these supervisors also organized a course of instructions for new industrial women employees, but had to discontinue it due to the fact that she did not personnally have time to keep it going.

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The supervisor on another road reported that she was able to visit regularly all the departments where women were employed and kept in close touch with all problems affecting their welfare. The only specific accomplishment she mentioned, however, was the expansion of washroom facilities for women. This Supervisor said, she advised and reported directly to the divisional superintendent.

None of the women supervisors whose background was given had previous experience or personnel relations training. Some were wives of railroad executives, and therefore had some background and understanding of railroad traditions. Another was formerly a teacher and had child care experience, but was doing very effective work on her personnel job.

Non-White Employees

No road was operating without Negro women, and while some installtions had few or none on their force, on others they filled many essential unskilled jobs, and on the largest road they comprised more than 20 perecent of the female personnel in 1943.

Many were coach cleaners, and on some installations predominated in this group; a considerable number were on yard, track and roadbed maintenance crews; some worked in roundhouses, cleaning and oiling locomotives, operating roundtables and doing cleaning-up jobs; others were loaders, truckers, dining and kitchen service employees, laundresses, train attendants, janitresses, matrons, and in various other housekeeping and personal service jobs.

Most roads had no Negro women in semi-skilled or skilled industrial occupations, however, some were lead women of laborers and cleaners and some were assistant foremen and even foremen of coach cleaners. On one road, for example, a Negro woman, had been foreman of coach cleaners for over a year and had jurisdiction over subforemen, including a man. On the largest road a number of Negro women had been advanced to skilled mechanics' helpers but on some none were employed in the shops.

Normally the industry employs few Negro women. In 1942, for example, only 4,400 of the 81,400 women who had credited compensation on Class I roads during the year were Negro, (more than) Three-fourth of this total were in laborers, classifications and the majority of the others were cleaners, janitresses and train and kitchen employees attendants, only about 30 were in clerical jobs). In midsummer of 1943, on the other hand, one large road alone reported over 4500 Negro women ~~employees~~.

On two installtions visited Mexican women were employed on trackwork and as coach cleaners, and another reported ~~xxxx~~ using "just about every nationality".

Pregnancy Policies

No uniform or formal policy was found among any of the railroads regarding pregnancy cases. Usually, if at the time of the physical examination it was discovered that the woman was pregnant she was not hired. But she was not asked to reveal this fact. In one system, when the pregnancy of two women became known, they were transferred to lighter work and were told that they could have leaves of absence so that they could return to work. The policy concerning pregnancy is generally worked out on an individual basis, and settled according to the opinion of the supervisor. No doubt, often women in this conditions resign without giving the reason to the company. One agent stated: "Pregnancy does not seem to be a matter of much concern or interest in any division. No worker who is furloughed for a legitimate reason loses his seniority, and this applies to pregnancy as well....."

Mothers with Children under Sixteen

The four railroads reporting said that no records were kept of the employment of mothers with children under sixteen years of age. It is known, however, that women with children of this age are employed, for one company states that it is difficult to transfer women with children of this age to other shops as might be desirable at time, and one supervisor says she assists the workers who apply to her in finding care for their children.

Union Organization and Affiliation

The railroads are among the most completely unionized industries in the country, and although no closed shop agreements are permitted in the industry, between 85 and 90 percent of the workers in the different branches of operation are union members.

On reporting roads ~~all~~ most unions claiming jurisdiction over occupations in which women were employed admitted them to membership, although some restricted membership to men only in the past. One large road estimated that between 80 and ~~85~~ 90 percent of the women on the various installations were union members.

In most cases women were apparently admitted to unions on the same basis as men. But restrictions were reported against Negro workers, both male and female. In one case it was stated that Negroes were admitted to membership, but were segregated, and in another it was claimed that their voting privileges were restricted. ~~1/~~ 17

While no specific information was secured on the membership status of women in two independent unions, it is possible that their membership, like their employment, was limited to the National emergency period.

As has been previously indicated, women in most cases had the same contractual protections as men. But this was not conditional upon union membership. Provisions in collective bargaining contracts applied equally to union and non-union workers. However since grievances were handled through the collective bargaining machinery, there were obvious advantages in holding union membership. The high proportion of union affiliations

17 ~~1/~~ The constitutions of a number of railroad unions have provisions that make possible various forms of membership restrictions on the basis of race.

is doubtless also due in part to the prejudice that exists among the workers in this long organized industry against "no-bills"--That is employees who benefit from collective bargaining but do not contribute to the maintenance of collective bargaining agencies through union membership and dues.

No data was obtained on dues of women workers and very little information was secured about their participation in union activities. Only one case was reported where a woman had been serving on a machine shop committee-- for over a year, and on one installation it was reported that women lost out on an important question affecting their promotion opportunities partly because they did not attend union meetings.

In the management group only one case was found where a woman supervisor participated regularly in labor-management committee meetings.

PERSONNEL FACILITIES

Rest Rooms

Adequate, roomy and well equipped restrooms and lavatories for women were rare in the industrial divisions of the installations visited. In some departments proper provisions were made, but in most cases these facilities were inadequate, poorly planned or poorly equipped.

One installation with almost 500 women, for example, had only 77 lockers for them. Some restrooms and lavatories were far from the workers and women had to walk blocks to get to them. Some toilets had curtains but no doors. Hot water, lockers, cots, and similar equipment were either inadequate or entirely lacking. Wash bowls, paper towels, mirrors, tables, chairs, drinking fountains were meagerly supplied.

On a number of installations it was reported that these facilities were either in the process of being expanded, or that plans for expansion had been submitted. On some it was stated that the shortage was due to difficulties in obtaining materials. However, the extent of the inadequacies indicated that insufficient attention had been generally given to these basic essentials, and the generally poor conditions, doubtless resulted in poor morale, loss of time, and even loss of workers. One agent commenting on the inadequate restroom and locker provisions on one large road reported that: "The work of women is dirty, wet, and greasy and the inability to change their clothes before going home is a distinct annoyance to them and is a contributing factor to turnover."

Eating Facilities

No company-owned cafeterias or lunch rooms were found in any of the installations. On the whole, little effort has been made on the part of the companies to have in-plant food services. In only two places were concessions operating. These places usually serve milk, candy, ice cream, soft drinks, but no sandwiches. In only one plant, were sandwiches sold. The majority of workers brought their lunches, and those not buying them patronized near-by restaurants and cafeterias.

Only one of the six systems provided lunch rooms for women . At all other places women ate in their rest or change rooms. These quarters are not always clean and seldom sufficiently large. At one engine house, the women complained about flies and asked that screens be put in.

Medical Facilities

All systems had medical departments and medical examinations were given to most workers before they were hired. But medical facilities for servicing plant workers varied greatly between installations. Two reported both doctors and nurses on duty daily; one reported a doctor only, on duty. No night duty was reported for either doctors or nurses. One system reported sending employees injured at night to the "nearest" hospital. Five of the 6 roads reported ambulance service available. First aid facilities on one installation consisted of first aid kits only. There was not even a first aid room, however, an ambulance was available.

The initial medical examination was apparently free in most cases but one company required workers to pay one dollar for the examination.

Two systems reported having group insurance plans covering hospital and medical costs. On one the cost was $1.60 per month on another $1.75.

Transportation

All reporting installations were close to public transportation facilities, and buses and street cars brought workers within a few blocks or upt to the yards and shops. Need for supplementary company transportation however, was indicated for taking applicants from downtown employment offices to the installations, which were generally some distance from the center of the city. Company transportation for taking women on night shifts to and from their bus or car stops was also considered desirable by Bureau agents. In a number of cases women stated that they had to walk a few blocks from their bus stops to the shops or yards, and that they were timid about crossing this distance alone at night.

As is the customs on the railroads, all installations gave free passes to their employees if they lived in one locality and worked in another. One system reported that when employees were transferred to a new locality, transportation was provided not only for the worker but also for his dependents.

Housing

In most localities, housing has not been a problem. One system reported that in isolated places, housing cars are used for men workers. When requisitioning workers, this company acquainted them with the housing situation and facilities available for workers. Another system reports using box cars on grounds back of a shop for Negro workers. In this instance, the wives were encouraged to work.

Child Care

Although a number of the cities where installations of the railroads are located have well-equipped child-care centers, most of the companies in these cities make no report on child-care problems. Only one woman counselor reports that she refers workers with welfare and child-care problems to local social welfare bureaus. Without reports from the child-care agencies in the cities, it would be difficult to determine whether child care is really a problem among the railroad employees.

In one system, the woman counselor assists women with matters of child care, however, because of her many duties she is only able to assist those who live in the vicinity of her office.

(One supervisor expressed the opinion that child care did not affect absenteeism and turnover.)

See ckid copy

NUMBER AND OCCUPATIONAL DISTRIBUTION OF WOMEN EMPLOYED BY CLASS I RAILWAYS

January, 1943 and July, 1944 1/

(Mid-Month Figures)

Divisions and Occupations	January, 1943		July, 1944		
	Number of Women	Percent of total Employees	Number of Women	Percent of total Employees	Percentage change from Jan. 1943

1/ Data is based on mimeographed reports issued at three-month intervals, since January, 1943, by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission, entitled "Number of Females Employed by Class I Steam Railways" These figures do not include switching and terminal companies.

NUMBER AND OCCUPATIONAL DISTRIBUTION OF WOMEN EMPLOYED BY CLASS I RAILWAYS

January 1943 and July 1944 1/

(Mid-Month Figures)

Divisions and Occupations	January 1943		July 1944		
	Number of Women	Percent of total Employees	Number of Women	Percent of total Employees	Percentage change from Jan. 1943
I. EXECUTIVES, OFFICIALS, AND STAFF ASSISTANTS					(Based on number of women)
Executives, general officers, and assistants	11	0.18	10	.15	- 9.1
Division officers, assistants, and staff assistants	7	.09	8	.10	+ 14.3
Total (executives, officials, and staff assistants)	18	.13	18	.12	% change
II. PROFESSIONAL, CLERICAL, AND GENERAL					
Professional and subprofessional assistants	67	.95	244	3.08	+ 264.2
Supervisory or chief clerks (major departments)	47	1.38	64	1.83	+ 36.2
Chief clerks (minor departments) and assistant chief clerks and supervising cashiers	333	3.32	569	5.38	+ 70.9
Clerks and clerical specialists (A)	692	6.69	1,244	10.94	+ 79.8
Clerks (B and C)	21,683	20.89	40,487	33.84	+ 86.7
Mechanical device operators (office)	5,893	78.21	7,244	86.36	+ 22.9
Stenographers and secretaries (A)	1,699	49.32	2,297	62.52	+ 35.2
Stenographers and typists (B)	11,198	72.62	14,656	84.76	+ 30.9
Storekeepers, sales agents, and buyers	13	.58	21	.90	+ 61.5
Ticket agents and assistant ticket agents	81	6.66	191	14.17	+ 135.8
Traveling auditors or accountants	2	.15			(- 100.0)
Telephone switchboard operators and office assistants	3,978	82.50	5,436	91.56	+ 36.7
Messengers and office boys	1,068	27.02	2,025	47.47	+ 89.6
Elevator operators and other office attendants	120	12.61	212	20.38	+ 76.7
Lieutenants and sergeants of police	5	.27	6	.32	+ 20.0
Patrolmen and watchmen	7	.06	53	.62	+ 657.1

1/ Data are based on mimeographed reports issued at three-month intervals since January, 1943, by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission, entitled "Number of Females Employed by Class I Railways." These figures do not include switching and terminal companies.

(Steam)

Divisions and Occupations	January 1943		July 1944		
	Number of Women	Percent of total Employees	Number of Women	Percent of total Employees	Percentage change from Jan. 1943
Traffic and various other agents, inspectors, and investigators	72	.69	143	1.34	+ 98.6
Claim agents or investigators	4	.46	22	2.43	+450.0
Freight claim agents or investigators	11	2.90	23	5.97	+ 109.1
Miscellaneous trades workers (other than plumbers)	18	2.20	22	2.80	+ 22.2
Motor vehicle and motor car operators	36	1.04	114	2.90	+ 216.7
Janitors and cleaners	1,111	19.98	1,937	31.71	+ 74.3
Total (professional, clerical, and general)	48,138	22.90	77,010	33.40	+ 60.0
III. MAINTENANCE OF WAY AND STRUCTURES					
Bridge and building gang foremen (skilled labor)	-	-	1	.02	+
Bridge and building carpenters	1	.01	2	.01	+ 100.0
Bridge and building painters	5	.19	14	.51	+ 180.0
Maintenance of way and structures helpers and apprentices	6	.08	67	.96	+ 1016.7
Portable steam equipment operator helpers	1	.18	10	1.44	+ 900.0
Pumping equipment operators	5	.24	10	.47	+ 100.0
Gang or section foremen	1	.03	1	.003	No change
Extra gang men	375	.86	1,089	1.64	+ 190.4
Section men	260	.20	1,456	.97	+ 460.0
Maintenance of way laborers (other than track and roadway) and gardeners and farmers	91	2.20	70	1.96	- 23.1
General and assistant general foremen, and inspectors (signal, telegraph, and electrical transmission)	-	-	1	.08	+
Signalmen and signal maintainers	-	-	1	.01	+
Assistant signalmen and assistant signal maintainers	-	-	5	.27	+
Signalman and signal maintainer helpers	-	-	19	.52	+
Total (maintenance of way and structures)	745	.35	2,746	.94	+ 268.6

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Divisions and Occupations	January 1943		July 1944		
	Number of Women	Percent of total Employees	Number of Women	Percent of total Employees	Percentage change from Jan. 1943
IV. MAINTENANCE OF EQUIPMENT AND STORES					
Equipment, shop, electrical, material and supplies inspectors	1	.05	2	.09	+100.0
Gang foremen and gang leaders (skilled labor)	2	.03	5	.06	+150.0
Blacksmiths	-	-	3	.05	+
Boilermakers	2	.01	2	.01	No change
Carmen (A and B)	12	.07	60	.31	+400.0
Carmen (C and D)	4	.01	99	.16	+2375.0
Electrical workers (A)	2	.02	43	.47	+2050.0
Electrical workers (B)	2	.08	33	1.24	+1550.0
Machinists	4	.01	128	.25	+3100.0
Sheet-metal workers	1	.01	6	.05	+500.0
Skilled trades helpers (M. of E. and Stores)	1,039	1.20	5,394	5.71	+419.2
Coach cleaners	3,263	28.04	6,526	45.50	+100.0
Gang foremen (shops, enginehouses, and power plants)	55	4.25	131	8.57	+138.2
Gang foremen (stores and ice, reclamation, and timber-treating plants)	13	1.10	20	1.51	+53.8
Classified laborers (shops, enginehouses, and power plants)	1,005	3.77	2,844	10.08	+183.0
General laborers (shops, enginehouses, and power plants)	2,629	10.19	5,426	19.79	+106.4
General laborers (stores and ice, reclamation, and timber-treating plants)	1,386	8.44	2,602	13.94	+87.7
Stationary engineers (steam)	15	.89	3	.19	-80.0
Stationary firemen, oilers, coal passers, and water tenders	4	.12	6	.22	+50.0
Total (maintenance of equipment and stores)	9,439	2.76	23,333	6.19	+147.2

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	January 1943		July 1944		
	Number of Women	Percent of total Employees	Number of Women	Percent of total Employees	Percentage change from Jan. 1943
V. TRANSPORTATION (OTHER THAN TRAIN, ENGINE, AND YARD)					
Train directors	-	-	1	.62	+
Train dispatchers	2	.06	-	-	-
Station agents (supervisory - major stations - nontelegraphers)	1	.04	-	-	-
Station agents (smaller stations - nontelegraphers)	274	5.15	417	8.03	+ 52.2
Station agents (telegraphers and telephoners)	266	1.88	652	4.60	+ 145.1
Chief telegraphers and telephoners or wire chiefs	5	.60	15	1.62	+ 200.0
Clerk-telegraphers and clerk-telephoners	585	5.65	1,856	17.25	+ 217.3
Telegraphers, telephoners and towermen	751	4.86	1,935	11.72	+ 157.7
Station masters and assistants	-	-	1	.22	+
Baggage agents and assistants	13	3.76	12	2.99	- 7.7
Baggage, parcel and station ~~room~~ attendants	594	7.17	1,662	17.87	+ 179.8
Assistant general foremen (freight stations, warehouses, grain elevators, and docks)	-	-	1	.50	+
Gang foremen (freight station, warehouse, grain elevator, and dock labor)	-	-	8	.29	+
Callers, loaders, scalers, sealers, and perishable-freight inspectors)	28	.26	126	1.00	+ 350.0
Truckers (stations, warehouses and platforms)	181	.74	1,605	5.55	+ 786.7
Laborers (coal and ore docks and grain elevators)	1	.13	16	.91	+ 1500.0
Common laborers (stations, warehouses, platforms, and grain elevators)	31	.71	130	2.75	+ 319.4
Stewards, restaurant and lodging-house managers, and dining-car supervisors	87	4.91	150	7.34	+ 72.4
Chefs and cooks (restaurants or dining-cars)	72	1.27	453	6.86	+ 529.2
Waiters, camp cooks, kitchen helpers, etc.	1,186	7.92	2,490	13.82	+ 109.9
Officers, workers, and attendants on barges, launches, ferry boats, towing vessels, and steamers, and shore workers	47	.76	79	1.20	+68.1

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Divisions and Occupations	January 1943		July 1944		
	Number of Women	Percent of total Employees	Number of Women	Percent of total Employees	Percentage change from Jan. 1943
Transportation and dining-service inspectors	2	.30	8	1.03	+300.0
Train attendants	94	2.65	183	3.95	+94.7
Bridge operators and helpers	3	.33	1	.10	-66.7
Crossing and bridge flagmen and gatemen	264	2.00	672	4.98	+154.5
Foremen(laundry) and laundry workers	356	64.96	475	79.03	+ 33.4
Total (transportation - other than train, engine, and yard)	4,843	3.27	12,948	7.97	+167.4
VI. (a) TRANSPORTATION (YARD MASTERS, SWITCHTENDERS, AND HOSTLERS)					
Switch tenders	-	-	66	2.02	+
Outside hostler helpers	-	-	3	.18	+
Total (transportation - yardmasters, switch-tenders and hostlers)	-	-	69	1.40	+
VI. (b) TRANSPORTATION (TRAIN AND ENGINE)					
Assistant road passenger conductors and ticket collectors	-	-	209	5.78	+
Road passenger brakemen and flagmen	4	.04	67	.65	+1575.0
Yard brakemen and yard helpers	-	-	19	.04	+
Yard firemen and helpers	-	-	6	.03	+
Total (transportation - train and engine)	4	.04	301	.34	+ 7425.0
Total of reporting divisions in which females are included	63,187	6.76	116,425	9.95	+ 84.3
Grand total, all reporting divisions	63,187	4.79	116,425	8.07	+ 84.3

all

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U. S. Department of Labor
WOMEN'S BUREAU
Washington

WARTIME EMPLOYMENT OF WOMEN

ON

RAILROADS

LETTER OF TRANSMITTAL

United States Department of Labor
Women's Bureau
Washington, D. C.
Date

SIR: I have the honor of transmitting a report on the wartime employment of women on railroads, which analyzes the extent of their ~~wartime~~ employment in this key war industry and describes their jobs and working donditions.

This report is based primarily on the data obtained in 1943 and 1944 by regional representatives of the Women's Bureau who gave on-the-ground counseling service to a number of railroad installations desiring to expand the employment of women in occupations normally filled by men.

The field data was obtained by Mary Alice Webb and May Dagwell. The report was written by Caroline A. De Caux.

Respectfully submitted,

Frieda S. Miller, Director

Hon. ~~Louis~~ Lewis B. Schwellenbach
Secretary of Labor

See attached

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SUMMARY OF FINDINGS

The railroads normally employ a very small proportion of women and restrict them largely to clerical, cleaning and other "housekeeping" and personal service jobs. But after Pearl Harbor thousands entered the industry and many took over jobs filled exclusively by men in the past.

Between September, 1942 and July, 1944, the female force of Class I roads more than trebled, increasing from 40 to over 116 thousand, and the total in non-clerical occupations increased sevenfold, rising from less than 6 to almost 40 thousand.

Women's importance in moving the nation's traffic is indicated by their employment in about two-thirds of the 128 railroad occupational groups, and by the fact that the 76,000 addition to the female force represented more than 60 percent of the total 1942-1944 personnel increase on Class I roads and about one-fifth the personnel expansion in the 1940-1944 period.

Although even at the peak of their employment women filled only about 8 percent of the railroad jobs, in this industry where operations are geared to split-minute schedules and where every unit of equipment must meet exacting safety standards, they represented an extremely important margin of labor.

However, a survey made by the Women's Bureau on 6 roads revealed sharp variations in the proportion and occupational distribution of women between systems and indicates that a much larger number could have been used to relieve the acute labor shortages that continued in this vital industry throughout the war.

On these roads the percentage of women in the non-clerical force ranged from 1.3 to 9.5 percent, and in the important maintenance of equipment divisions from 3.5 to almost 17 percent. On comparable installations women in some cases were only 5 percent while in others they were 25 to 30 percent of the employees. Only a few cases were found where they were doing unsuitable work, but many were reported where suitable jobs were either unfilled or filled by men.

On ~~roads~~ with the largest female force, ~~they~~ were in a wide range of maintenance and transportation jobs previously closed to them. ~~They~~ were in every type of locomotive and car shop, operating monster hammers and punch-presses, less formidable drill presses, lathes and other metal working machines, and assisting skilled mechanics on an endless variety of production and repair operations. ~~They~~ were in roundhouses and yards, servicing, oiling and cleaning locomotives and cars, operating transfer and turntables and helping on light repairs; and ~~they~~ were on track, roadbed and lighter maintenance of way and buildings jobs.

In the transportation divisions ~~they~~ were in almost every non-operating occupation, and a large proportion filled highly responsible and exacting jobs as telegraphers, telephoners, small station agents and crew callers and dispatchers. A number were also employed in the very select train operating crews.

While most women in the maintenance divisions were laborers and coach cleaners, one-third on the largest road and about a fourth in the industry as a whole were skilled mechanic's helpers. Five of the six roads had few or no women in skilled production jobs, but on one some were employed in every craft, including such unusual occupations as blacksmiths, boilermakers, car inspectors and foremen of skilled labor.

On all reporting roads women received the same wage rates as men, on most they had the same seniority protection and were upgraded on the same basis as men. However, they were generally excluded from skilled production jobs, and on the largest road all those hired during the war for maintenance work were considered temporary employees. On 5 of 6 roads, however, all who were in maintenance and clerical jobs had the status of permanent employees and could be displaced only on a seniority basis.

* * *

INTRODUCTION

In order to handle the nations wartime traffic, the railroads had to add ~~over~~ nearly ~~400,000~~ 300,000 employees to their force, between 1940 and 1944, and about one-~~fifth~~ more than fourth of this additional personnel were women. But ~~they~~ railroads were among the last man-employing industries to increase the employment of women or to admit them into occupations normally filled by men. Even in September 1942, 9 months after Pearl Harbor, when Class I roads reported a shortage of some 60,000 workers, only 3 percent of their total personnel and less than 6 thousand of over a million workers in their non-clerical divisions were women. 1/

However, as traffic mounted to unprecedented levels and men by the thousands left the industry to join the armed forces or to seek better paying jobs, labor shortages became more acute, and women began to fill many critical gaps in the labor force of this key war industry. As a means of ~~excelliorating~~ accelerating their employment, the Office of Defense Transportation early in 1943 summoned a conference of management, labor and government representatives to discuss the necessity and feasibility of expanding their employment in all domestic transportation services. The urgency of this problem was pointed out by the chief of the O.D.T. Division of Transport Personnel who told the conference that:

> "As manpower shortages become ~~more~~ increasingly acute, one of the major sources of labor from which all branches of transportation must draw will be the women of the nation." And added, "They are our great hope if the transportation systems of the country are to be kept effectively running...
>
> "Never before in the history of the nation have we looked to women as we do today to meet such a problem....During 1943 many thousands will be needed to fill transportation occupations which up to this time have been handled exclusively by men."

1/ Class I steam railroads include all steam railroads (other than switching and terminal companies) having an annual operating revenue of more than $1,000,000. ~~In the 1942-1945 period~~ they accounted for more than 94 percent of the total employment of all steam railroads, including switching and terminal companies.

p. 12

The Women's Bureau was one of the agencies participating in this conference, and at once instructed its regional representatives to render assistance to railroads interested in an expanded use of woman power. This was one of a number of war industries to which Bureau representatives gave on-the-ground counseling service. One of the largest systems in the country requested the Bureau to examine the employment practices on all its installations and recommend methods that might facilitate more extensive employment of women and reduce turnover among them. Between the spring of 1943 and 1944 Bureau agents observed employment practices on all important industrial installations of this system and on 1 ~~to 5~~ 2 installations of 5 other roads.

In the course of these visits much information of value to other roads was secured. This included data about new jobs on which women were or could be employed; the suitability of their new occupations; their wages, hours, promotion opportunities and other working conditions; their training, personal facilities, and other personnel practices that had a bearing on the availability and stability of women employees and on their safe and efficient employment in occupations previously closed to them.

In this report the findings made on the installations visited as well as the industry-wide employment trends and women's post war opportunities on the railroads are analyzed and summarized.

SCOPE

In all, 13 industrial installations on 6 of the 32 largest railroads in the country were visited. In April, 1944 these 6 systems employed more than 370,000 workers, or about one-fourth of the total force, and ~~over 43,000~~ nearly 44,000 women, or two-fifths of female personnel of all Class 1 steam railroads. The installations visited, had about 85,000 employees at the time of the survey, and 12,000 of the total were women.

Actual observations of women's jobs and working conditions were limited to the maintenance divisions, where the majority of the women in non-clerical jobs were employed. But statistical data were obtained showing the distribution of the total female force on these roads in all the standard occupational classifications.

In addition, Interstate Commerce Commission quarterly reports (issued since January 1943), which show the distribution of the entire female personnel of Class 1 steam railroads in the standard I.C.C. classifications have been analyzed. But since many of these I.C.C. classes--especially of maintenance workers--cover a considerable variety of jobs, this data has been used to indicate only the overall trends and the broad outlines of the industry-wide occupational pattern. The more precise information in this report, relating to the nature of the work women were actually doing and to their employment conditions, is based on the findings made in the Bureau Survey.

THE INDUSTRY AND ITS LABOR FORCE

Wartime Importance of Industry and Size of Labor Force.

The provision of adequate rail transportation was basic to the fulfillment of the nation's war production and military ~~transport~~ program. For notwithstanding the extensive development of motor truck, intercity bus, airway, pipeline and inland waterway transportations since World War I, the railroads have remained the most important branch of the domestic transportation system and have handled the bulk of the wartime traffic. In the 1942-~~1944~~ 1943 period they provided more than two-thirds of the domestic freight transportation, and their operations, both in passenger and freight miles of service greatly exceeded all previous records.

For decades the railroad labor force has ranged among the largest industry groups in the country. Although in the 1920-1940 period it was cut by almost 50 percent, at the beginning of the war Class 1 roads still employed about 1 million workers. In order to handle the unprecedented volume of wartime traffic these systems added ~~about 400,000~~ workers to their force by 1944, and ~~more than~~ one-~~fifth~~ fourth of these new workers were women.

Nature of Railroad Operations and Character of Personnel

The revenue tons carried one mile by Class 1 railroads in 1943 exceeded the 1918 total by 73 percent ~~(80)~~ nearly the 1940 total by 100 percent. The number of passengers was twice as large as in 1940 but lower than in 1918. However, due to longer trips per passenger, passenger miles were about ~~270~~ percent above the 1940 ~~figure~~ and 100% above the 1918 level. ~~In the first 6 months of 1944 the railroads carried 75% more tons of freight and over twice as many passengers as in the first 6 months of 1940.~~ more than

Railroad operations fall into three broad categories: (1) transportation, (2) maintenance, and (3) the clerical, technical and managerial services connected with these activities. While transportation is the primary function of the industry, in terms of numbers of workers employed, maintenance is by far the largest branch of operations. This is primarily due to the fact that railroads build and maintain their own right away, and repair and service all their rolling stock and other equipment. This work involves continuous maintenance of almost 400,000 miles of track, tens of thousands of bridges and structures, over 40,000 locomotives and over 2 million freight and passenger cars.

The railroad personnel, therefore, in addition to the many special operating and non-operating transportation groups, includes large corps of workers from every major industrial craft and sizeable groups of building trade and construction workers.

Under Interstate Commerce Commission regulations railroads classify their industrial personnel into two major maintenance and two transportations divisions, while the clerical, professional and managerial occupations are classified into two separate divisions.

The distribution of the railroad personnel in these 6 divisions is indicated in the table below:

Table 1. — Number and Distribution of Class I Railroad Employees by Major Divisions - Mid-July, 1944

Occupational Groups	Number	Percent of total
I. Executives, Officials and Staff Assistants	14,651	1.0
II. Professional, Clerical, and General	232,084	16.1
III. Maintenance of Way and Structures	314,373	21.8
IV. Maintenance of Equipment and Stores	393,400	27.3
V. Transportation (other than train, engine, and yard)	170,198	11.8
VI. Transportation (Yard and hostlers, train and Engine)	318,181	22.1
Total	1,442,887	100

Chas Note: Why not combine this summary with the one on p. 12 ?

8

The Maintenance of Way and Structures Division includes all the activities connected with maintaining the tracks, yards, and other fixed facilities in condition. The work of employees in this branch includes construction as well as continuous inspection and maintenance of roadbeds and tracks, telegraph and other signaling equipment, bridges and buildings, and all other stationary facilities.

About 20 percent of the railroad labor force is engaged in these activities and approximately 90 percent of these workers are section and gang laborers. Other sizeable groups include: skilled building and construction trades workers and their helpers; signalmen, signal mainainers, and helpers, and operators of portable steam and pumping equipment used on construction work.

(1) fulfillment = first spelling

10(c)

SCC 11/1/44

P. 9 para

June '44 employees = 1447,328 ✓

" '40 " " = 1,035 721 ✓

Increase +11,607 ✓

For chg.

	1943	1940	1918
Revenue tons carried 1 mile	730,132 mil. ✓	375,369 mil. ✓	405,379,284
No. of passengers	888 ✓ millions	456 mil.	1.084,998 thousands
Passenger miles	87,925 ✓ Mil.	23,816 ✓ mil	42,676,579 "

Steam locomotives in 1943 = 41,983 .

Code 10c For chg

This is all railways →

1943	
45,406	T. locomotive units - all r r. (p 2)
43,297	" " for which reports were filed (p. 67)

4 ICC classification =
VI(a) Transportation (yardmasters, switchtenders, and hostlers)
VI(b) Transportation (train and engine)

(a)?

Code 11 – DCC. figures for yr. 1944
– (1st col. addition of daily & hrly. basis)

5,258" gang f.
236" " "
25,111" " or sec. f.
56,872" extra gang men.
143,304" section men
3,371" main. of way laborers & gardeners & farmers
1,352" gang f.

235,504 / 294,246 = 80%

also about 80% for apr. '44, yr. 1940, & July 1944
— using the above classifications.

The largest groups of unskilled employees are in this division. However, most of this work is heavy and rough or for other reasons largely unsuitable for women. Normally few women are employed in this branch of operations.

The maintenance of equipment and stores division embraces all the activities involved in keeping rolling stock (cars, locomotives and other vehicles) and other equipment in condition, and the receipt, storage, issuing and salvaging of supplies used in railroad operations. The maintenance of equipment work includes cleaning, oiling, and inspection of all rolling stock as well as the repair renovation and rebuilding or building of equipment. All railroads have shops where their rolling stock is repaired, many build and rebuild their cars, and some even build their own locomotives. 1/

Since each car and locomotive is made up of hundreds of parts and all equipment must meet rigid safety specifications, much skilled workmanship by expert mechanics is required from the original inspection and dismantling through all the repair, production and final reassembling operations. In addition a great deal of the skilled work as well as the semi-skilled and unskilled is very heavy.

There are, however, numerous production and repair operations that are light enough for women and require relatively little experience or training. And there is of course a great deal of servicing and renovation work that is essentially of the cleaning variety.

1/ This branch of railroad work has been even of greater importance in war than in peace. For shortages of materials and labor for new equipment coupled with the extraordinary volume of traffic, necessitated the most intensive utilization of available facilities, and increased correspondingly the work involved in keeping them in safe operating condition.

(13) p. 1 ✓ War M. Cont.

True, if this checks it:

"It is not unusual for a (R R) to maintain shops where much of its equipment is not only repaired, but also completely built." ✓

Close to 27 percent of the railroad personnel is in this division and more than half are skilled mechanics representing many shop crafts. Other skilled groups include inspectors of equipment, shops and stores; stationary engineers and firemen; oilers and, of course, the foremen. The semi-skilled and unskilled groups include: the mechanic's helpers, the apprentices, the laborers and the coach cleaners. Normally the propertion of women in this division is very small and they are generally excluded from production operations.

Transportation (other than train, engine and yard)

Practically all non-operating transportation employees (except clerical and professional) are in this division. Numerically important groups include: the telegraphers, telephoners, and towermen; the small-station agents; the baggage, parcel room, station and train attendants; the station, warehouse and platform truckers; the crossing and bridge gatemen and flagmen; the loaders, callers, scalers and inspectors of perishable freight; and the various kitchen and dining service employees. Laundry workers are also in this division. Small but highly ranking groups include the large stationmasters and train dispatchers.

Transportation (Train Engine and Yard)

This division includes all the operating employees engaged in the actual movement of trains. The ICC subdivides these workers into two groups. One includes the yardmasters, switch tenders, hostlers and their assistants. The other, the locomotive engineers and firemen, the conductors, brakemen, flagmen and road baggagemen.

Professional, Clerical and General

In this division are classified all the clerical and professional as well as some non-clerical employees. About one-tenth of the total are in the latter group and they include patrolmen and watchmen, ~~printers~~, elevator operators, motor car operators, and some of the custodial workers.

Miscellaneous Trades workers.

-10-

or of either of these dates

Code 11

Year 1943

10,848	patrolmen + matchmen
968	elv. ops.
781	misc. trades
3575	motor veh.
1862	lieut. + serg. at police arms
5734	janitors + cleaners
23,768	
23,768	= 10.9 %

Code 12

April 1944 — (Occupations in which women working)

	Total
✓	9,357 ✓
✓	987 ✓
	782 ✓
✓	3759 ✓
X	1874 ✓
	6095 ✓
	22,854
	227,990 = 10 %

EMPLOYMENT OF WOMEN

Industry Trends

The maintenance and transportation divisions of the railroads were almost exclusively a man's world before the war. As late as September 1942, the entire industry had less than 6,000 women in these divisions - mostly in cleaning and personal service jobs. Even in the clerical force, where women predominate in a few occupations, they were a relatively small minority (less than 20 percent) and men secretaries, stenographers and clerks are still popular in the industry.

Although feminist historians like to emphasize the fact that employment of women on the railroads began in the middle of the last century, when a charwoman was engaged on a large road, though most of the railroad era the proportion of women in the industry has been small and few women employed in industrial jobs. However, during the present war, as well as during World War I women represented a very substantial portion of the war-time addition to the personnel, and close to half entered maintenance and transportation jobs.

In 1910 less than 22,000, or about 1½ percent of the railroad employees were women. In 1918 the total rose to more than 100,000, or to slightly over 5 percent of the personnel. But by 1940 the U. S. Census showed only about 37,000 women among the 1,100,000 workers claiming railroad employment, or approximately 3.5 percent.

No marked expansion of the female force occurred in the industry until wartime labor shortages became quite acute. In 1941 Railroad Retirement Board data indicated that the proportion of women was below 3 percent. Even in September 1942, when Class I railroads, in a survey made by the American Association of Railroads, reported close to 60,000 unfilled jobs, only about 40,000, or approximately 3 percent of their personnel were women, and only about 5,600 were in non-clerical jobs, and over 1,300 [illegible] station agents (and ticket stations).

3. 1940 Census – Labor Force pp 194-195

35,658 Women
1,135,019 Total = 3.1%

Skid from different sources for Sept. '42:

Total employees – Code 11 – ICC
Women " 15 ODT.

Note – Women predominated in certain clerical jobs in Jan. '43 & assume they did Sept. '42.

Population

2. Census – 1910. Vol. IV. pp. 92, 93

T.	Women	
1,155,198	4755	
~~1,246,596~~	~~4,960~~	R. R. transportn.
27,661	136	" " inspectors
~~24,375~~	270	" " Other - Unskilled
	5161	
~~1,298,632~~	~~5,366~~	Total
1,207,234		

5161 / 1207234 = .4%

The following two years, however, witnessed a striking increase in the size of the female force. By mid-January 1943 Class I roads had more than 63,000 women on their payrolls. Within another year the number rose to 106,000 and by mid-July 1944 to over 116,000. 1/ In the divisions reporting female workers their proportion rose to almost 10 percent, and in the total force to more than 8 percent.

This was the largest number and proportion of women ever employed on the railroads. The importance of the 76,000 wartime addition to the female force is perhaps best indicated by the fact that it represented about 60 percent of the total personnel increase reported by Class I roads between September 1942, and July 1944, and approximately one-fifth of the 1940-1944 increase.

But more significant than the overall expansion, was the sharp rise in the nonclerical divisions, where the number of women increased from 5,600 to almost 40,000, or more than sevenfold, and where they were admitted into a great variety of occupations filled formerly only by men.

The distribution of the 1944 female personnel in the six railroad divisions is indicated in the table that follows. (The occupational distribution of the female force is given on pages—)

Table 2.—Total and Distribution of Women Employed on Class I Steam Railroads, by Division, Mid-July 1944 1/

Occupational Divisions	Number	Percent of Female personnel	Percent of Total personnel
Executive, Officials and Staff Assistants:	18	—	0.15
Professional, Clerical and General	77,010	66.1	33.40
Maintenance of Way and Structures	2,746	2.4	0.94
Transportation (other than train, engine and yard)	12,948	11.1	7.97
Maintenance of Equipment and stores	23,333	20.0	6.19
Transportation (Yardmasters switchtenders and hostlers)	69	.1	1.40
Transportation (train and engine)	301	.3	0.34
Total, Reporting divisions in which females are inc.	116,425	100.0	9.95
Grand total, All reporting divisions	116,495		8.07

1/ Interstate Commerce Commission figures.

*

	T.	Women
July '44	1,442,887	116,425
Sept. '42	1,322,205	40,000
	120,682	76,425

$\frac{76,425}{120,682} = 63.3\%$

* * For Reg

Women in 6 Selected Rls - Apr. 15, 1944

Occupation	Number	Percent	
		Distribution	Of total personnel
Total	43,828	100	11.8
I	4	-	.14
II	22,445	51.2	36.9
III	1,081	2.5	1.8
IV	14,330	32.7	12.2
V	5,752	13.1	13.8
VI a	34	.1	.7
VI b	182	.4	.2

12a

17@p53 Footnote Page 12: (Add) Several thousand more women were employed by the American Railway Express, the Pullman Company and Class II and Class III Roads.

not cited - not in library at present. 10/4/45

Rr. Retirement Bd
Annual Report 42 - 43
43 - 44

H D
7110
R12 U631

As these figures show, two-thirds of the female force was in the clerical divisions, and of those in industrial jobs almost two-thirds were in the maintenance of equipment and stores divisions. However, even in 1944 women accounted only for about 6 percent of the employees in this important industrial branch of operations. That this was not due entirely to lack of suitable work is indicated by the data obtained on the roads included in the Bureau survey. They reveal extreme variations in employment practices between systems, and indicate that a much larger proportion of women could have been used to relieve the critical labor shortages that continued in the industry throughout the war.

Employment Trend and Variations on 6 Selected Roads

None of the 6 roads in the Bureau survey employed many women before the war. The largest had only about 1,300 in its force in peacetime, some 4,600 in September 1942, but over 22,000 by mid-April 1944. Another expanded its female personnel in this 1942-1944 period from approximately 2,400 to 6,500, and a third from 1,450 to 3,000. The total increase on 5 reporting systems in this period was from 7,650 to almost 34,000. The sixth system, which had few women before the war (no figures obtained), employed more than 9,000 in 1944. In April 1944 these 6 roads had altogether 43,333 women, or approximately two-fifths of the female personnel on all Class I railroads. They employed three-fifths of the 23,300 women in maintenance of equipment and stores jobs; two-fifths of the 2,740 in maintenance of way jobs; over 46 percent of those in the transportation services and approximately 30 percent of the total clerical occupations.

The proportion of women in the total force of these 6 systems was approximately 40 percent above the industry average. Over 21,000 or almost half their women employees, as compared to only one-third in the industry as a whole, were in non-clerical occupations. More than 14,300 or close to one-third of the total, compared to only one-fifth in the industry, were in maintenance of

* *

Code 12 — Code 18

Women – Apr. '44

Division	Class I	6 Selected	% 6 Selected are of Class I
Total	112,063	43,828	39.1
I	18	4	22.2
II	73,769	22,445	30.4
III	2,741	1,081	39.4
IV	23,310	14,330	61.5
V Transptn	11,908	5752	48.3
VI a "	317	216	68.1
VI b "			

*

Code 18 — Code 23 — Ret'd to O.D.J.

	Women Apr. 1944	Sept. 1942
I. Chicago & N. W.	1,581	894
III. Ill. Central	2,970	1,446
IV Pa	22,332	4,642
II. Denver & R. G.	765	283
V Union Pac.	6,490	2372
T.	34,138	9,637
V. S. P.	9690 (W.C.)	

equipment and stores jobs. In the maintenance of way division the respective proportions on the 6 roads and the industry ~~as a whole~~ were 2.5 and ~~1.1~~ 2.4 percent, and in transportation (other than yard and train and engine) ~~13.8~~ 13.1 and ~~7.4~~ 10.6 percent.

Extreme variations both in the proportion and the occupational distribution of the female personnel were found between these 6 roads. On one, for example, only 5.8 percent of the employees were women, and less than 20 of every hundred were in non-clerical occupations. On another 13.6 percent were women and ~~more than 60~~ nearly 40 of every hundred were in industrial jobs. The proportion of women in the non-clerical force ranged from 1.3 to 9.5. In the maintenance of equipment divisions ~~the range was~~ from 3.5 to almost 17 percent; in the maintenance of way from 0.1 to 4.0; and in transportation (other than train engine and yard) from ~~2.2~~ 0.9 to ~~22~~ 21.2 percent.

Additional data obtained indicates that on comparable installations visited women accounted for less than ~~7~~ 5 percent of the industrial force on some and for 25 to 30 percent on others.

Mrs. De Camp asked a recheck on this as an O.D.T. official told her he considered it too high. Mrs. Robison recked at L.C.C. & found it correct. See checker's & Mrs. Robison's notes attached to table coded (18).

Occupational Distribution of Total Female Personnel

The industry-wide occupational pattern described in this section shows the distribution of the female personnel of all Class I roads in the 128 standard I.C.C. Classifications as of mid-July 1944. Many of these groups, as had been noted earlier, especially in the maintenance divisions, are very broad in their coverage. Their principal common denominator being the degree of skill and the wage rates of the jobs included. Thus, for example, mechanics' helpers of all crafts are grouped in one I.C.C. classification, and the 3 laborers groups cover scores of different jobs. This data therefore gives only the broad outlines of the women's occupational pattern. The more specific information on the actual nature of the work they were doing is presented in the section on Job Descriptions, pages — —.

In midsummer of 1944 women appeared in about two-thirds of the I.C.C. occupational groups. In the maintenance of equipment and stores divisions they were reported in four-fifths of the classifications, but the overwhelming majority were in the least skilled occupations. However, about one-fourth were graded as skilled mechanics helpers and small numbers were employed in most of the skilled crafts. In the transportation services on the other hand, about one-third were in occupations that involved considerable responsibility and training, but most of these were of a semi-clerical or semi-administrative character. (See detailed occupational tables on page —)

Maintenance of Way and Structures Occupations.

Women were reported in 11 of the 23 occupational groups in this division. However, both in the industry as a whole and on the 6 selected roads over 95 percent were in 3 laborers groups. The balance were employed as construction and building trades helpers; as signalmen or signal maintainers or helpers; as pumping and portable steam equipment operators or helpers, and as carpenters and painters.

1	train dsr
417	station agents
652	" "
15	chief teleg & telep.
1856	clerks " " "
1935	teleg. & telep
1	station master & ass't
4877	
12948	= 37.7 %

Maintenance of Equipment and Stores Occupations.

In this division women appeared in all but 5 of the 23 occupational groups, but about two-thirds were in the least skilled classifications. In July, 1944 some 11,000 or 47 percent of the total were classified as laborers, about 6,400, or over one-fourth of the total as coach cleaners, and 5,250, or almost one-fourth as skilled trades helpers. Only about 400 were in skilled occupations but some were reported in almost every craft. Included among these were women blacksmiths, boilermakers, "carmen", electrical workers, machinists, sheet-metal workers; stationary engineers and firemen, oilers, inspectors and foremen of skilled labor. There were also 160 women gang foremen.

Women were in a minority in all groups - including the coach cleaners, where more than half the employees even in 1944 were men. In the laborers groups their proportion ranged from 11 to 20 percent, and in the helpers group they were 6 percent of the total. However, the ratio of helpers in the female maintenance force was approximately the same as in the male force. But two-thirds of the total were on the 6 roads in the Bureau survey, and the largest of these accounted for more than half in this group as well as for two-thirds of the women in skilled grades.

Transportation (other than train, engine, and yard).

In this division women also appeared in all but 5 of the 13,000 standard occupational classes, and almost a third filled quite responsible positions. Some 3,800 were telegraphers and telephoners (who handle train orders), accounting for 14 percent of all the employees in these occupations. Some 970, or close to 8 percent, were station agents (small stations), with almost half also performing the duties of telegraphers and telephoners, Other occupations in which large groups of women were employed, in the order of their numerical importance were the various dining and kitchen services - 3,093; the baggage, parcelroom and

*

Code 12 - July, 1944

6526 coach cleirs.

5426 gen. "
2602 " "
14,554
23,333 = 62.4%

" 5426
" 2602
" 2844 class "d" labourers
10,872
23,333 = 46.6%

11,002
23,333 = 47.1

April **

4127 women skilled trade helpers in 6 trds. - Code 18
5249 " " " " in Class I - Code 12
= 78.6 %

Assuming recpts (Nov. 52 to 63) to be skilled trades in Maintenance of Eq'mt + Stores (IV.), the proportion Pa. Rr. of all Class I would be 285/381 = 74.8%

station attendants - 1,622; the station warehouse and platform truckers - 1,605; the crossing and bridge flagmen - 672; the laundry workers - 475; the train attendants 183; and common laborers - 146.

Unusual and highly responsible positions in which from 1 to 15 women were reported included: a train ~~dispatcher~~ director, assistant general foreman; chief telegraphers, telephoners, or wire chiefs; baggage agents or assistants; and transportation dining room inspectors.

The roads in the Bureau survey employed women in most of the above classifications and their proportion in this division was almost twice as large as in the industry as a whole. There were, however, sharp variations between ~~these roads~~ systems.

Transportation (yard, train ~~and~~ engine and)

Over 300 of the 370 women in this division were in the train operating services. More than 200 were ~~classified~~ as assistant passenger conductors and ticket collectors (accounting for almost 60 percent of all employees in this group); 67 were road passenger brakemen or flagmen; 19 were yard brakemen or helpers, and 6 were in the yard firemen and helpers classification. Most of the other women in this division were switchtenders, and 3 were listed as outside hostlers helpers.

More than half the total in these occupations were employed on the roads in the Bureau survey.

Professional, Clerical, and General.

Some 40,500 ~~women~~ or more than half the ~~total~~ in this division were in the clerks (B and C) classification which includes ticket sellers, but two-thirds of the employees in this group were men. Over 30,000 were in five other occupational groups in which women predominated. These included the office

Women predominate

569 chief clerks & asst C.C. etc. (minor dept.)
7244 mechanical device ops's.
2297 stenogs. & sec.
14656 " & typists
5436 telep. switchboard ops.
30,202

mechanical device operators, with 7,244 or over 86 percent women; the stenographers and secretaries (A) group with some 2,300, or 62.5 percent women; the stenographers and typists (B) group with 14,656, or almost 85 percent women; and the ~~messengers and "office boys" group~~ telephone switchboard operators & office assistants with 5,436, or 91.5 percent women.

Smaller groups of women were employed in various clerical supervisory and other occupations involving considerable responsibility or training. Among these were: ~~some 570 women chief clerks of minor departments~~; 64 chief clerks of major departments; over 240 professional and subprofessional assistants; close to 200 ticket agents and assistants; over 140 traffic and various other agents and inspectors, and over 1,240 clerks (A) and clerical specialists.

Approximately 4 percent of the women in this division were in custodial and other non-clerical jobs.

~~In the~~ Executive, Officials and Staff Assistants group only 18 of the more than ~~4,500~~ persons were women.

The wide dispersion of the wartime female personnel in railroad maintenance operations is more clearly indicated in the section that follows, where the type of work that women were actually doing on the roads visited is described.

JOB DESCRIPTIONS

The operations on the installations visited included the whole range of activities involved in keeping rolling-stock, the track systems and other facilities and equipment in condition, and women were employed in practically every subdivision of maintenance work. They were on heavy as well as light track, yard, and structures maintenance jobs. They performed a great variety of production and non-production industrial operations in the shops where locomotives and cars were repaired and rebuilt. They worked in the roundhouses where locomotives are checked, serviced and given light repairs between runs.

No description of Transportation in this section as Miss Thinburg instructed that only maintenance occupations be analyzed

2025 ✓ Messengers & Ofc. Boys
212 ✓
6 ✓
53 ✓
143 ✓
22 ✓
23 ✓
22 ✓
114 ✓
1937 ✓ — Other Custodial & Non-cler. occptns

4,557 ✓

4,557 / 77,010 = 5.9 %

They cleaned, inspected, lubricated and helped on light repairs of coaches and freight cars in the railroad car yards, and worked on numerous custodial, cleaning and other unskilled jobs in powerhouses, stations, on trains, at terminals, in the stores and other sections where maintenance work was performed.

The descriptions that follow are limited almost entirely as the observations were to women's work in the maintenance divisions.

Maintenance of Way and Structures Jobs

There are few occupations that would normally be considered less suitable for women than railroad track work. Much of it, as is well known, is heavy, rough, requires exposure to all types of weather, is frequently performed some distance from habitable buildings and communities, and in locations where inadequate or no personal facilities are available.

There is, however, some light track, and other maintenance work in the railroad yards, and near terminals and stations which, while not among the most desirable occupations, is not too heavy for women.[1]

Before the war women were generally excluded from this branch of railroad work, and most of the roads visited employed few in maintenance of way jobs, but in 1944, 5 had a total of 180 in this division, and only 2 of these had more than 25 women each. The largest road, however, had several hundred classified as section and gang laborers.

For the most part these women worked in or near the yards and stations, and were doing relatively light, track dressing, and cleaning work. On some roads however, they also worked in outlying sections, and some were on heavy rail-laying and other "pick-and-shovel" jobs.

---

[1] In World War I, after the initial employment of women on track maintenance jobs, the U. S. Railroad Administration, upon the recommendation of its women's section, ordered that those so employed should be transferred to other work. The principal reasons given was that some of this work was too heavy and the surrounding unsuitable for women.

Code 3 - All. Central

Entire gang lifts, homers, + mine Relief.

Those doing light work cleaned tracks at or near terminals, swept around the yards, stations, and other buildings, cut brush and weeds along the right away, cleaned switches, cleaned and filled switch lamps, shoveled snow from platforms, sidewalks and switches, worked as crossing watchmen, and performed other ~~light~~ cleaning tasks.

Somewhat rougher and heavier work included: loading and unloading crushed stone or other balast; tamping ties by packing balast under and around ties with picks; tightening track bolts and spikes, and leveling out roadbeds.

On two roads women were employed on much heavier work as well. On one, women who worked in gangs of 8 or 9 (including ~~two~~ men) were laying rails that weighed about 1000 pounds each; drove spikes and bored holes with a hand machine in rails and angle bars; lifted rails and ties on to trailers, and lifted handcars, on which they rode to and from work, on and off the tracks. All heavy lifting was done by the entire gang.)

On the other road, it was reported that in the course of six months, a gang of 25 women raised 7 miles of passing siding, and one mile of yard track, helped lay two miles of 100-pound rails, installed 3,000 ties, leveled stone balast on 8 miles of track, with only the spiking done by men, and loaded and unloaded all the materials and tools used in this work.

Negro women were reported on the heavy track maintenance jobs, ~~but white as well as Negro and Mexican women were doing the less arduous maintenance of way work.~~ Most of those seen, were robust types but this was not always the case. On one road, for example, the woman who was assistant foreman on a track gang, bore closer resemblence to a fifth avenue model than to the popular conception of a section foreman. See picture p.— .

Women generally worked under the direction of men foremen, although some were the assistant foremen.

Those who worked in outlying sections were within daily commuting distance from their home station.

Only a few women were seen on more skilled maintenance occupations. These included a few painters and helpers who worked only around building; signal maintainers helpers, who wound armatures and performed other semi-skilled work in a signal repair shop; a carpenter, who did mostly clerical work; and other helpers who were running errands and doing mostly unskilled work.

On one installation women operated the "Jerry" machine which is part of the district telegraph and fire alarm system. These women received reports at stated intervals from watchmen and policemen indicating fires or any other trouble along the right away, or giving the all-clear signal, and relayed these reports to the proper authorities.

Maintenance of Equipment and Stores Jobs

Before the war, the installations visited employed ~~small number of~~ few or no women in maintenance of equipment work and restricted them largely to the usual car cleaning, custodial, and similar unskilled tasks. But they virtually barred them from production and equipment servicing jobs in the shops, roundhouses, and yards. In 1943 and 1944, however, women on some of these roads ~~filled~~ a great variety of production and servicing ~~jobs~~ in every branch of maintenance operations, and their work ranged all the way from unskilled window-washing, engine-wiping, and grease-mixing jobs to highly responsible inspection and skilled production operations.

Women were found working in practically every type of shop on production as well as non-production industrial jobs. They were employed in foundries, in tanks, boiler, blacksmith, erecting, electric, Diesel Engine and other machine shops where heavy metal parts for locomotives and cars were manufactured and repaired, as well as in the upholstery, carpenter, cabinet, paint and other shops where lighter repair and renovation work on cars was performed. Some also assisted on light repairs in the yards and roundhouses.

A considerable number of those in the shops were helpers to skilled mechanics in every craft. There were women blacksmiths' and boilermakers' helpers as well as helpers to "carmen", carpenters, painters, electrical workers, machinists, welders, coppersmiths, tinsmiths, pipefitters, welders and upholsterers.

Some of these women helpers worked more or less independently on the lighter machine and other production operations, others the majority were assisting male mechanics and were under the continuous direction and supervision of these skilled workers.

A considerable number of the helpers, as well as women in laborers classifications, were doing unskilled work such as: bringing tools and parts to mechanics; cleaning rolling stock, parts, tools, work-benches and shops, sorting and cleaning scrap, and performing numerous other essential but completely unskilled tasks.

Most of the installations had only a few or no women on skilled production work. On the one road where an appreciable number were doing skilled work, they were not apparently all-round mechanics in their crafts. Since this was the only road that found it practicable to use women on skilled production jobs, the nature of the work these women were doing will be described separately in this section.

Semi-Skilled and Unskilled Production Work.

Women helpers who were on machine production jobs operated electric drills, radial drills, drill presses, electric grinders, various types of lathes, pipe-cutting and shaping machines, bolt cutting and threading machines; metal cutting shears, magnaflux machines, do-all and other electric saws, and assisted skilled mechanics on numerous other machine production operations.

In a number of balcksmith, forge, boiler and tank shops they operated various types and sizes of steam hammers, (up to 3600 pounds in weight) and formidable steam presses(up to 150 ton in weight) used for forging metal parts for locomotives and cars. 1/ Other women in these shops held dies and sledges under hammers, swung sledge hammers that weighed 4½ to 10½ pound, were shearing and putting welding compounds on metal materials, and performed many other production operations.

In some of the above-mentioned and other metal working shops, women operated forges, heated picks, rivets and bolts and passed them to mechanics; helped insulate steam pipes; helped machinists on switch points, helped make springs; ground rough edges off castings with pnuematic grinders; helped riveters with small rivets; repaired, renovated and produced spring pad lubricators; worked on traction motors; assisted pipefitters and coppersmith clean and wash the locomotive boilers and pipes; assisted men on heavy wheel production jobs; Cleaned and painted axles, journals seats and wheels. (On one installation an all-woman crew was employed in the spring-pad lubricating shop on production jobs, and in one shop all the wheel painting was done by women.)

In one erecting shop women who assisted on reassembling operations installed burners, plug valves and blow-off cocks; helped with the wheel shoes, wedges and frame work; washed out plugs and brackets, scraped frames, pipes, fireboxes, cylinders, and doors lubricators; checked blue prints, kept book lined up and worked at tool room attendant.

1/ (See next page for foot note.

Footnote for page 23

1/ These are not arduous jobs. The women sit most of time and the power driven controls are easy to operate. Some foremen estimate that it took about a month to train a woman to become a good steam hammer operator.

In some of the electric and Diesel engine shops women did underneath and inside inspection of cabs, tested controls in cabs, worked on airbrakes, scraped, painted and flushed batteries, polished fuses, inspected underneath cars for loose bolts, and performed a variety of unskilled tasks.

In wheel shops women were found working both on light and heavy production jobs. In one they cleaned axles and journals and painted all wheels. In the other a number assisted men on heavy wheel and axle production operations. With the aid of an electric hoist some of these women picked up heavy axles (750 pounds in weight) and transferred them to a burnishing machine where they smoothed the axle ends with a burnishing wheel. Others who worked at the wheel press marked the center of the axles, helped push the new or repaired wheels on it, operated the air jacks, and helped roll the finished wheels out of the shops (wheels weighed up to 2500 pounds). In the yard of this road women also helped remove and put on these heavy freight-car wheels. (It was reported that 2 women and 3 men working at the wheel press were doing the same work as 5 men did previously.)

Women helpers and laborers who worked in the car and car shops and yards performed numerous lighter operations (in addition to some of those described above) On most installations they scraped the interior of cars, and washed and cleaned ceilings, walls, windows and fixtures before and after painting: in some of the truck and passenger shops they performed light repairs. In the upholstery shops they glazed, dry-cleaned sewed and nailed coach seat covers, made shades for car and cab windows, and in some cases the heavy curtains that go between car platforms. In the passenger car shops some stripped dining car equipment, inspected and repaired air brakes;

Scraped and cleaned car frames for painting, puttied outside of cars, did brush and spray painting; repaired parts of equipment and machines; put protective oil on disassembled equipment; sorted metal scrap and cleaned it in hot oil; did the lye vat cleaning and did bench cleaning of glass and small parts; in one freight car shop, women also hlped on a Cincinnati press brake, and in this as well as other shops they performed a great variety of other semi-skilled and unskilled tasks.

In most shops and yards women lubricated rolling stock, made lubricating rolls and checked, packed and oiled journal boxes. One of the most skilled jobs was performed by 2 women oilers in a Locomotive and Crane repair shop. These women were responsible for lubricating 60 different pieces of equipment. They kept involved records of servicing; called in the equipment whenever the records indicated that any piece needed oiling; and lubricated completely without any supervision. The foreman in this shop claimed that these women were able to do all this work after 3 months training, and that they were as dependable as any man previously employed.

Both in the car and Locomotive repair shops women worked as tool-room attendants, generally handling the lighter supplies.

All roads had women turntable operators, and on a number they also operated the transfer tables on which locomotives and cars are moved in and out of shops or from one set of tracks to another.

The endless variety of other tasks, requiring little or no skill, that women were doing included; chipping caked dirt from locmotives and cars; steam-cleaning moveable parts of locmotives with powerful hose spray; cleaning air brakes, bearings for journal boxes, gaskets , valves and other small parts; painting steam pipes, and car windows; mixing asbestos and placing it in molds (with bare hands); Disassembling and sorting old hardware , lighting fires under locmotive boilers; pouring sand into sandboxes on top of engine boilers; holding stencils for stencilling markings on cars; washing paint brushes pails and stencils; cleaning shops, roundhouses; powerhouses; work benches; machines and tools; carting supplies in wheel barrows; putting oil in motors ; filling radiators; tagging locmotive parts when engines were disassembled And helping on numerous other operations.

All roads had women turntable operators, and on a number they also operated the transfer tables on which locmotives and cars were moved in and out of the shops or to different tracks.

Women's Skilled Production jobs.

The normal railroad requirements for admission to skilled maintenance occupations is a 3 to 5 year apprenticeship in the course of which every phase of the work involved in a craft is learned. However, due to the critical shortages of skilled workers during the war, these requirements were gradually reduced, until helpers with as little as one year experience could be admitted on a duration basis to skilled jobs. On some installations it was found that -----

(continue paragraph next page)

male employees were generally advanced to such work under these modified provisions. Women, however, were in effect excluded from skilled operations on most roads, although in the railroad shops, as in other heavy metal working establishments, there are some skilled operations that are not too heavy for them.

The descriptions of women's skilled work that follow are based primarily on the information secured from one road which had a substantial number in skilled maintenance occupations. While the descriptions do not cover all the work the women were doing, they do indicate the type of operations on which it was found practicable to use them.

It should however again be noted that these women were not apparently all-around mechanics in their respective crafts. But this was doubtless also true of many men admitted to skilled occupations during the war.

Boilermakers.- Two women reported in this classification were doing primarily electric welding of locomotive boilers, tubes and fireboxes.

Carmen.- The majority of about 30 women who were in this classification were employed on freight-car repair work. They trimmed within cars, did riviting and grinding, repaired air-brakes, and did such other work as fixing running boards and floors. Several who were listed as carmen-welders worked in a steel car shop and did electrical welding of castings at furnace.

Car inspectors.- About two-thirds of more than 50 car-inspectors did general freight-car inspection (except closing of car doors, hopper and similar heavy work). One-third were doing general inspection of passenger cars. Some inspected only air-brakes. Some also repaired air-brakes and made other light running repairs.

Insert from p. 28

Electricians.- The majority of more than 70 women in this classification were in one shop where they wound armatures, operated cranes, and charged batteries. Other women did regular cab-signal testing and repairing in a running

24 carmen, repair trucks, trim, grinding, rivtg. etc (p. 17)
2 " - welders, electric castings at furnace - Steel Car Shop (p. 17)
6 repairmen - running boards, flues, etc on freight cars. (p. 20)
2 freight car air brake repair (p. 20)
32

repair section, inspected electrical equipment on incoming steam locomotives; connected and disconnected motors and transformers; inspected motors, motor generators, switch groups, transformers, lights and pantegraphs in a car shop. Some were drilling and placing freight cars, and others did ~~electrical~~ bench work.

Machinists:- The work performed by about 100 machinists included; light bench work and various machine production operations. These women operated milling, slotting, boring, traveling and magnaflux cutting machines; engine, turret and other lathes; a radial control press, drill presses and shapers. Some of ~~these female machinists~~ did undercutting of commutators and magnetic testing of axles, some made repairs on steam-heat connectors, air-brakes, and brake cylinders, reservoirs, oxygen and acetylene equipment. One was a bolt inspector in an erecting shop.

Painters:- A number of women employed in this classification did spray painting and rough brush work.

Pipefitters:- Did only light work such as repairing leaks and fitting up pipes.

Sheet metal workers and tinsmiths: Made up forms and did various light tinsmithing work.

Upholsterers:- Were employed mostly on power machine sewing jobs, and were making coach seat covers and curtains for cars. (This is the ~~only~~ principal skilled occupation in which a few women were employed on other work, and for which one that was open to them before the war).

Welders:- Did mostly magnaflux testing of locomotive parts.

Crane Operators:- Women crane operators were employed in a number of shops. In one erecting shop 2 women directed 15-ton overhead cranes used on locomotive repair work. (Some women also operated cranes at piers, loading and unloading cars.)

Transfer to p. 27

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Locomotive Servicing or Roundhouse Work.

The roundhouses, or enginehouses, have been aptly described as ~~the~~ "the stable of the Iron Horse". For here locomotives are inspected, cleaned, lubricated, given light repairs between runs, and prepared for their next run. Some of this engine "grooming" work is light enough for women, but much of it is grimy, and the surroundings are rough. In peacetime only men generally worked in the roundhouses. At the time of the survey, however, roads ~~employed~~ women on engine cleaning and servicing work, as turntable operators, and in some cases on light repairs.

Most of these women were doing unskilled work. They cleaned locomotive cabs, windows and headlights, wiped engine jackets (some climbing on top of locomotive), and cylinders, filled oil-tank boxes, lanterns, and rod cups, worked as sandhouse attendants (climbing ladders and filling sandboxes on locomotive boiler); dispensed oil, and did such other simple work as filling small cartons with chemicals used in boilers for keeping water from boiling over.

~~Some trained they~~ also lubricated and ~~admitted~~ engines. ~~On some they~~ checked the water in the boilers by testing and recording results; lit fires under the engine boilers to start up steam; handled water hose for filling the tenders (in which fuel water and oil for locomotives are carried); cleaned locomotive main rods and side rods for Magnaflux testing, and packed cellars.

On a number of installations, women worked as "engine supply men" and were responsible for checking and equipping each locomotive with a complete set of tools and other equipment that engines must have before they are taken out on a run. This was rather responsible work, since the equipment for each type of engine differed somewhat, and the women had to see that every locomotive was properly equipped before it left the roundhouse. In some roundhouses women also assisted in running repairs, and in one they helped set tires, fit driving boxes, and assisted in laying off shoes and wedges. All 6 systems employed women as turntable operators in the roundhouses.

Car Cleaning and Servicing Work.

All cars are cleaned and serviced between runs in the car yards as well as at main stations en route. This work involves not only sweeping, cleaning, and washing floors, seats and windows, but includes also thorough overhauling of the interior and exterior of cars, as well as the inspection and oiling of journal boxes, the checking and replacement of electrical and other equipment, the provision of ice, linen and other supplies needed in transit.

Car-cleaning is one of the industrial occupations in which women were employed before the war. However, men always predominated in this work, and even in the summer of 1944 more than half the "coach cleaners" in the industry were men. However, on most of the roads in the survey the majority of the workers in this classification were women. In addition, many women laborers and some of the helpers who assisted on repair and renovation of cars (as previously described) were doing essentially car cleaning work.

Women employed as coach cleaners, did both inside and outside cleaning on most installation. The inside work included washing car walls, ceilings, windows and fixtures; dry-cleaning and vacuuming upholstery; sweeping and mopping floors and thoroughly reconditioning the interior of cars. The outside work consisted of washing cars first by hose with a special solution, then scrubbing them thoroughly with long-handled stiff brushes, and finally washing them with clear water, and wiping off windows. On some installations women did the entire outside job. On others men did the hose washing, and women followed up with the brush scrubbing.

Women also serviced cars with ice for air condition and drinking fountains, supplied linen and other equipment needed in transit.

Women laborers cleaned freight cars, and cleaned and supplied cabooses. This work includes washing caboose floors and ceilings, and supplying them with coal, ice, water and flagging equipment and firing caboose stoves. Helpers and

also generally checked, packed, cleaned and oiled laborers' journal boxes.

Coach cleaners who had been advanced to electrician helpers, checked air-condition equipment, light fixtures, plugs and bell systems.

Stores Jobs.

In the stores sections women were doing largely unskilled work, of an industrial and a semi-clerical nature. Some kept storerooms and stock in order, issued supplies, delivered materials to and from cars to cabooses, to roundhouses and other sections. Others were loading, unloading and stacking lumber, sorting and cutting iron scrap; dispensing oil, cleaning lanterns, filling grease guns. On one installation a woman who worked as assistant to a receiving clerk, checked materials in and out of freight cars. Another who was assistant to a sectional storekeeper, handled only the lighter supplies - such as bolts, nuts, washers, etc., and a third who was a shipping assistant, was doing laborer's ~~semi-clerical~~ work.

Miscellaneous Jobs

On all roads women were commonly employed as matrons, janitresses, messengers, cleaners, sweepers, laundry workers, and similar "housekeeping" jobs.

Very little information was secured about the responsibilities of those in industrial supervisory jobs, but some were employed as foremen and assistant foremen. On one installation, for example, a Negro woman who was considered exceptionally capable and was well liked, was a labor foreman and had both a man and woman assistant. On this installation there were also 15 head women in the yard supervising 12 women. This road also had a Mexican woman classified as a labor foreman, but she was actually a counselor for Mexican workers and did not supervise their work.

A number of installations also employed women as yard clerks, and in other industrial clerical and semi-clerical positions normally filled by men. These included women train-crew callers and dispatchers, car checkers, clerks who made up interchanges between roads and took car orders from different roads and distributed them to the yards, and other clerical workers whose jobs involved considerable responsibility.

Incidental information on the work of women in the transportation occupations, secured on one large road indicated that:

1. None of the women in the telegrapher, telephoner and towermen classification were towerman. ~~(However it is known that some women towermen were employed on another road).~~
2. Those in the "caller's loaders, sealers, scalers..." classification were only callers.
3. Women baggage and parcel room attendants were mostly checked baggage, handled identification tags, ~~but did not handle lifting.~~
4. Women train attendants were mostly trained nurses.

Conclusions

The overwhelming majority of women both in the helpers and laborers classifications were doing unskilled work, or were on jobs that required little training or skill. Sharp variations were found in the employment practices of different roads. Some restricted women entirely to the usual cleaning and personal service jobs, while on others they were found in practically every type of shop on a great variety of machine and other new production and repair equipment servicing jobs.

For the most part, the work women were doing did not involve too heavy weight lifting or other excessive physical strains, although many jobs were dirty, grimy and rough. On all installations, however, there were many suitable jobs either unfilled or filled by men on which women could have been used to ease the wartime manpower shortages. In some cases it was found that such jobs were

filled by old or handicapped male employees whose seniority entitled them to available light work, and whose general knowledge of railroad operations was of definite value even on relatively unskilled ~~jobs~~ work. Other reported factors that limited the employment of women on suitable work included: objections from male employees and their wives(!); prejudices against women on the part of male supervisors; failure to modify antiquated hiring and other personnel practices to facilitate the entrance of women into industrial work; and, of course, labor shortages and availability of better paying jobs in other industries.

One road, for example, reported that a decision was made against employing any more women flagmen because "too many letters came in from ~~flagmen~~ trainmen and ~~their~~ wives of trainmen objecting..." On another a woman supervisor stated that prejudice against women among male supervisory personnel was partly responsible for the high turnover rate among women. On a third it was reported that men employed in the shops voted against admitting women to certain light skilled jobs, although union officials favored their employment on such work. On this ~~one of the~~ largest road, that was trying desperately to increase its female force, few or no adjustments had been made in antiquated hiring procedures that accounted for the loss of many prospective employees.

1/ The War Manpower Commission in one of its Labor Market Information industry series stated in 1944 that "Non-operating employees constituting the great majority of railroad workers, earn less than workers in comparable occupations in other industries. Skilled railway and shop craftsmen earn less than employees with the same skills in metal working plants; and track laborers start at 46 to 55 cents an hour, far below the entrance rate for other industries..."

2/ Practically all railroad collective bargaining agreements have a "faithful service" clause which provides that old or partially incapacitated workers should be given preference in the assignment of light jobs. These clauses generally specify that "Employees who have given long and faithful service in the employ of the company, and who become unable to handle heavy work to advantage, ~~shall~~ will be given preference in the assignment of such light work in their line as ~~can be arranged for and which~~ they are able to handle."

ALPHABETIC LIST OF OCCUPATIONS IN WHICH WOMEN WERE EMPLOYED ON SIX SELECTED ROADS 1/

Occupation	Occupation
Attendant	Cook (restaurant, section gang car)
Baggage room	Counselor (for Mexican Nationals)
Engine supply house	Crew Caller
Grease room	Crew Dispatcher
Linen room	Crossing Flagman
Office	Crossing Watchman
Oil house	Draftsman
Sand house	Engine Supplyman
Stores	Engine Wiper
Tool room	Engine Watcher
Cashier	Firelighter
Checker	Gang Foreman(coach yard, skilled labor)
Cars	Gang Foreman(Assistant, coach yard, track
Commissary supplies	
Stores	Helpers
Yard	Blacksmith
Claim agent, freight	Boilermaker
Cleaner	Carman
Coach	Car oiler
Engine	Carpenter
Freight cars	Coppersmith
Shops roundhouses, powerhouses, (laborer)	Counterman (stores)
	Electrician
Clerical Workers	Machinist
	Molder
Billing Clerk	Painter
Car record Clerk	Pattermaker
Chief Clerk (minor department)	Pipe Fitter
Chief Clerk (major department)	Plater
Chief, Pass Bureau	Plumber
Clerical specialists	Portable Steam Equipment
District Passenger Office Clerk	Signalman
File Clerks	Upholsterer
Information Bureau clerk	
Interchange Clerk	Ice Bunker--for air conditions
Mechanical Office Device operator	Janitor
Repair records clerk	Journal Box packer and oiler
Secretary	Kitchen Workers
Statistician	
Stenographer	
Tariff distributor	
Telephone Switchboard operator	
Ticket clerk	
Timekeeper	
Tonnage clerk	
Transportation clerk	
Yard clerk	

1/ This list included only occupations reported on installations visited by Bureau agents. Since the survey was restricted primarily to maintenance operations, it contains only a very limited coverage of clerical and transportation occupations.

Occupation
Laborer
Air Room (shop)
Automatic Control Equipment Shop
Boiler shop
Erecting shop
Extra gang (track and roadway)
Locomotive shop
Machine shop
Maintenance of way (other than track and roadway)
Passenger car repair shop
Powerhouse
Roundhouse
Section (track and roadway)
Sheet metal shop
Spring shop
Station warehouse and platform
Stores
Tank shop
Wheel shop
Yard
Laundry workers
Lead Laborers
Matron
Messenger
Oiler (cars, locomotive, other equipment and parts)
Operator
Bolt threading machine
Bolt cutting machine
Boring machine
Crane (shop-overhead, pier loading)
Crimping rail anchor
Drill (press, radial, others)
Grinding machine
Lathes (turret, burnishing, engine, others)
Magnaflux machine
Milling machine
Motor vehicles
Paint spray gun
Pipe-cutting machine
Punch press
Radial Control press
Saw (do-all)
Steam Hammer
Sewing machine
Shaper
Sheet metal cutting shears
Slotter machine
Transfer table

Occupation
Turntable
Travelog cutting machine
Passenger Traffic representative
Professional and subprofessional Assistant:
Rivet bucker, heater
Rodman
Secretary
Secret service operative
Sectional storekeeper assistant
Skilled Mechanics
Boilermaker
Carman
Carpenter
Inspector (Freight and Passenger car, air brakes)
Electrical worker
Machinists
Painters (rolling stock buildings)
Pipefitters
Sheet-metal worker
Tinsmith
Upholsterer
Welder
Sectional storekeeper
Sorter (freight department)
Sorter scrap iron
Station agent
Superintendent's asst. in charge of student telegraphy program
Supervisor, Women's (District)
Supervisor (Reservation Bureau)
Sweeper
Telegrapher
Telegrapher, student
Ticket agent
Ticket agent learner
Ticket Puncher, gateman
Tractor driver
Waitress

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Women's POST WAR EMPLOYMENT OPPORTUNITIES

The railroads will doubtless reduce their female force after the war, but a number of current factors, as well as development after World War I indicate that the cut may not be very sharp in the immediate post war period. Although long range trends do not indicate ~~many~~ extensive employment opportunities for women in railroad industrial operations, they seem to point to an increase in customary occupations as compared to prewar levels. But the determining factor in current as well as long-range trends will, of course, be the over-all level of employment on the railroads and in other branches of the nation's economy.

In this respect the immediate outlook on the railroads is very favorable. This industry will not have any "reconversion" problem. It has a huge back-log of maintenance work which can begin as soon as materials are available. This together with the demobilization and industrial transportation requirements will doubtless keep employment on the railroads high for some time after the war.

10(a) p18, 19

While this post-war level is not likely to be high enough to absorb both the wartime force and the returning veterans, there are a number of factors that should enable a considerable number of women in the maintenance divisions to hold on to their jobs.

(see Turnover p 50 this Report) (Nursing & Welfare)

1. Many have the same seniority protection as men, and a considerable number have greater seniority than their civilian male competitors who entered the industry during the war.

12; 18

2. A large proportion are on unskilled low paying jobs, which are not likely to be claimed on a seniority basis unless prolonged and serious unemployment develops.

3. Many of the younger veterans who were in low paid jobs will probably not return to the industry, since normal upgrading and promotion on the railroads is very slow.

~~The War Manpower Commission estimates at the beginning of 1944 indicated that~~ stated that by July over 300,000 railroad employees had entered the armed forces.

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Some cuts in the female force during the immediate post-war period, however, are indicated in the findings made on reporting roads, although the ex extent could not be estimated. A number of cases were reported, for example, where women were removed from roundhouse and maintenance of way jobs, and this substitution will doubtless be accelerated. The position of women on actual production operations jobs in the shops seemed relatively insecure. A large proportion of these women were employed on a road where all women hired during the war were classified as temporary employees. In most other cases actual production operations were performed largely by women "helpers," and since rates in this classification are relatively high, such jobs are much more likely to be claimed by men on a seniority basis. Voluntary quits among women on heavy and rough jobs have been considerable and may be expected to continue. And an unknown proportion will, of course, lose their jobs because of short seniority on the employing roads.

Employment trends following World War I show that although very sharp reductions were made in the female force of some divisions, their proportion in the industrial divisions remained relatively high for some time after the war. Because these developments may throw some light on possible trends in the present post-war period, and because they illustrate how closely women's opportunities in this industry are linked to the over-all employment levels, they are briefly summarized here.

In the year following the 1918 armistice a 20 percent cut was made in the railroad female personnel, but in 1920 when total railroad employment mounted above the 2 million mark more than 8,000 women were again added to the force. Thus two years after the war, the railroad female personnel was only a little more than 11.5% below the wartime peak, but the average number of women workers in these two peacetime years was actually 15,800 below the 1918 average. From 1920 to 1926, the total railroad force was cut by a quarter of a

Oct. of each yr	Women	I.
1918	101,785 ✓	
1919	81,803 ✓	
1920	90,052 ✓	
1926	61,302	
1940	35,658	3.1% 1,135,019
1917	31,400	yr. 1.8% 1,723,734

Census

Rx. Admittn

81,803 } peacetime yrs.
90,052 ✓
2 (171,855 ✓)
85,927½ ✓

101,785 ✓ (1918)
85,927½ ✓
15,858

101,785
90,052
11,733 = 11.5%
101,785

million and the female force by about one-third or to 61,000. In 1930, when railroad employment dropped to about 1½ million, 55,000 women remained in the industry. By 1940 when employment dropped to 1,100,000 only about 36,000 women were left.

While the total decreased in this period was considerable, it should be noted that in the spring of 1926, more than 8 years after the armistice, there were almost twice as many women on the roads as in January 1917 (estimated at 31,400 by U. S. Railroad Administration); and even in 1940 their proportion in the total force was twice the pre-war level.

As the female personnel contracted, women gradually disappeared from maintenance and transportation occupations dropped sharply as their total decreased. In the latter part of 1918, 1919, 1926 and 1942 respectively their total in such occupations was 25,000, 15,000, 9000, and 5,600 respectively.

However, although the proportion in the usual clerical occupations remained consistently above pre-war levels, the number of women in the

follow the above described pattern, cannot be accurately determined at this writing. But even if employment of women should continue at a fairly high level for some time after the war, a future contraction in the railroad labor force seem inevitable, and women will, of course, be among the first to feel the effects of any substantial reduction. Factors indicating this development include: growing competition from other forms of transportation; continuing technological and other labor saving devices, and an increasing trend toward locating industries as near consuming markets as possible.

1/ 1918, 1919, 1920, and 1926 figures are for Class I steam roads only, the 1930 and 1940 figures are based on U. S. Census reports, and include all workers claiming railroad employment.

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01/48.17.5

Think we should pay "appropriately" because [redacted] occupations as listed for earlier years not quite comparable with later dates. See Mrs. De Cuir's rough table (coded 72 & Code 15 (Gen. Defense Transportation).

from Code 7 8 9

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WORKING CONDITIONS

Employment conditions on the railroads are almost universally governed by the provisions of collective bargaining contracts, and on most reporting systems the basic employment standards specified in the agreements covering maintenance and clerical workers applied uniformly to men and women.[8] This reflected the policy of the respective national railroad unions, who early in 1943 recommended to their subordinate units not to make any agreement that would allow lower standards for new employees--men or women.[9]

It should be noted, however, that this "equality" standard had negative as well as positive aspects. While it gave women the same employment standards as men, it also generally deprived them of any special consideration in such matters as choice of shifts or most suitable jobs.

In addition, certain forms of sex discrimination were reported--which were not technically violations of standard contractual rules.

male workers discriminated in some instances. Women did not vote for pro-management slates because they were intimidated by men — in some cases.

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[8] No adequate data was obtained on contracts covering transportation employees.

[9] Railway Employees' Department, American Federation of Labor, Circular No. 1177, February 18, 1943.

10

Seniority Rights

Among the most valued employment standards of railroads workers is their seniority system. Seniority, or length of service is the basic factor in determining the order of promotion, upgrading, transfer, layoffs, and rehiring, as well as the right to preferred jobs, shifts or runs, on all railroads. This seniority system had its origin on some roads at the beginning of the railroad era, and reached universal adoption with the unionization of the industry. To the workers, it is a guarantee against discrimination and favoritism; to the industry it assures a large corps of experienced workers, thoroughly conversant with railroad rules who are essential to safe operations.

Women, as well as men, have benefited from seniority on railroads. This is indicated partly, in the U. S. Census data on the age distribution of the industrial population. This data, ~~for example,~~ show that even in the 1930-1940 decade when competition from younger workers was very great, the older women in railroad employment were more than able to hold their own. In 1930, for example, only about one-third of the 55,000 women in railroad employment were 35 years or over, but by 1940 two-thirds of the 36,000 were in this age group, and 12,000 as compared to only ~~6,000~~ 7,000 in 1930 were 45 years old or over.

During this war most of the national railroad unions opposed any limitations on the ~~seniority~~ seniority rights of new employees--men or women. In an official circular to their subordinate units these unions recommended early in 1943 that "..No special agreements should be made for new employees, limiting ~~the~~ seniority or any other rights of such employees."

Most railroad workers begin to accumulate seniority from the day their pay starts. Some of those in laborers' classifications, however, do not begin to acquire regular seniority until 60 days after they're employed.

1940. Pop. Vol. III Part I. U.S. Summary. p. 199. $\frac{24,745}{36,000} = 68.7$

'30 " Vol. II Hewil Report on Occ. pp. 410, 411.

On most reporting roads it was found that the unions representing maintenance and clerical workers generally enforced this policy. Women were admitted into the maintenance and clerical jobs as permanent employees and had equal protection with men of all the standard seniority rules. They did not however, benefit equally with men from some of the wartime relaxations. The principal form of sex-discrimination found in this respect was the general practice of excluding them from skilled maintenance jobs for which some could have qualified under the relaxed wartime provisions, (although not under the peacetime regulations.)

Another serious form of sex discrimination was found on one road which had a collective bargaining contract with an independent union representing maintenance workers. This road had a wartime agreement under which all the women hired during the war (and men over 45) were classified as temporary employees. But on this road, too, women had equal seniority with men while in service. [1] The agreement with this union also specified that men could be requested to relinquish light jobs to women, regardless of their normal seniority right to such jobs.

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[1] This agreement specified that women employed after a specified date in 1941 "Will be considered temporary employees" and .. "shall acquire and may exercise seniority in accordance with applicable provisions, but shall only retain such seniority during the period of the present national emergency."

Wage Rates

Rates in the railroad industry are based on the job classification, not the sex of workers. This practice dates back to the close of World War I when the United States Railroad Administration issued an order requiring that where women are employed"... their pay, when they do the same class of work as men, shall be the same as that of men." In peacetime and during the present war this job-rate principle has been preserved under the collective bargaining agreements that are almost universal in the industry.

Agreements covering labrers, as well as those covering clerical, semi-clerical and custodial employees who are under the jurisdiction of the railway clerks union, contain provisions modeled after the World War I equal pay order, which generally specify that "...the pay of women employees for the same class of work shall be the same as that of men."

The shop craft union agreements, which cover skilled shop mechanics, their helpers, the apprentices and the coach cleaners, do not usually contain this specific clause, but in these too, all rates are based on skill or craft, not sex.

Since the job classifications in this long-organized industry are considerably standardized, and women, in the industrial occupations are not segregated into special occupational groups or departments, there is little likelihood of by-passing this equal pay or job rate-policy by creating special classifications for women.

During the present war the railroad unions have stressed the importance of preserving this job-rate principle in various organizational memoranda. In February 1943, for example, a circular letter sent out by the Railway Employees' Department, (AFL) and bearing the endorsers approval of the Railway Labor Executives' Association recommended to all General

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27a p.7 "..."no lowering of existing standards or differences in rights or compensation should be agreed to. Equal treatment is essential regardless of sex."

No violation of this job-rate policy was found on any of the systems in the Bureau survey. Women in all cases received the same rates as men who predominated in every occupational classification.

1 to 6

not in every occupation but may be safe to say "every occptnl classification"

Occupational Rates

Since the survey was primarily concerned with the employment of women in maintenance operations, comprehensive data were obtained only for those classifications in which the majority were employed--that is: for the maintenance of equipment, and store laborers, helpers and coach cleaners groups. No adequate data was secured on rates of maintenance of way laborers, who are among the lowest paid in the industry, but all systems reported that they had no sex-wage differentials in any branch of operations.

Most of the wage data was obtained before the general wage increase of 1944 was granted to non-operating employees. However, since this increase was retroactive to 1943 the rates both before and after the increase will be indicated in this section. The regular hourly increases plus the additional adjustments allowed in the 1944 wage order resulted in a total rate increase of:

11	cents	on	hourly	rates	under	47 cents
10	"	"	"	"	of	47 to 57 cents
9	"	"	"	"		57 cents or over

Laborers rates on reporting roads ranged from 51 3/4 to 60 cents in 1943 and from 61 3/4 to 70 cents after the wage increase. One road provided a 3 cent increase after 3 months of service, bringing the maximum in this classification up to 72 cents.

Coach cleaners rates ranged from 55 to 60 cents before and 65 to 69 cents an hour after the increase.

Lead women generally received 5 cents above the going rates.

Rates of skilled mechanics' helpers ranged from 63 to 73 cents before and from 72 to 82 after the increase. One road reported an automatic one cent hourly raise after the first and second year of service, bringing the maximum for women in this classification up to 84 cents in 1944.

Okg Note:
Have okd this p. & half of p. 45 from schds. & Mrs. DeCamp's summary, coded 32. The latter was received over the phone by Mrs. D. Camp & I have accepted at this time — Dunlap

Later (Oct. 22, 1945)
Wrote to Mr. E. C. Thompson & okd this to his reply. See his letter attached to Code 32.

On most roads all helpers, regardless of their craft classification or the actual character of their work received the same rate. Only on two roads were a few minor exceptions to this rule reported. More frequent variations were indicated in laborers rates, but the range was extremely narrow, and in no case exceeded 4 cents an hour.

Women in skilled classifications received 95 ~~to 98~~ cents an hour in 1943 and 9 cents more per hour in 1944.

Among the lowest paid women were the messengers, whose ~~daily~~ rate ranged from $3.68 to $4.58 a day in 1943; matrons, and sweepers who received less than 55 cents an hour and a store attendant whose beginning monthly rate was $60, and the maximum after 3 years of service was $71.

Reported rates for industrial clerical workers ranged from $~~3.68~~ in 1943 to $7.~~50~~ per day in 1944. Flagmen on a road where women were employed in this occupation received $7 to $8 a day.

Wage Advancement

There is relatively little wage advancement on the basis of length of service in the Railroad Maintenance Divisions. The chief exception to this rule is in the apprentice group, But only a couple of women were classified as apprentices at the time of the survey, ~~and none were indicated in later I&C reports.~~

The principal form of wage advancement available to women in industrial occupations was through upgrading from laborers to helpers classifications. The rate differential between these two classes on 3 reporting roads ranged from ~~16~~ 16½ to ~~18~~ 18 cents per hour. As is evident from these figures, promotion to a helpers grade represented a substantial daily and weekly wage increase.

(1)

Can find no record of 98¢ to common or skilled "laborers." 98¢ was pd. to mechanics on Pa. Rr. but all were men.

(2)

	Ill C.	Pa.	S.P. (1743)
Women helpers	70¢	73¢	69¢
" laborers	53¢	55¢	52½¢
Difference	17¢	18¢	16½

Shift rates.

Although in many industries shift differentials are paid even in departments that regularly operate on a three shift basis, this is not the case on the railroads. None of the reporting roads had shift differentials in any departments employing women.

Upgrading

All promotion in the railroad industry, except in some executive supervisory and administrative positions, is based on seniority or length of service. The ~~standard~~ upgrading rule embodied in ~~most~~ collective bargaining ~~agntracts~~ provides that: "Promotion ~~will~~ be based on fitness, ability and ~~seniority~~; fitness and ability being sufficient, seniority ~~will~~ prevail." Under this system qualifying employees with the longest service in specified groups of related occupations or departments in a given area - are the first in line for promotion or upgrading.

On most reporting systems women in the maintenance divisions were generally hired in as laborers and advanced to helpers grades, whenever sui able openings occurred, on an equal seniority basis with men. On some installations such openings were frequent, and it was only a matter of weeks or even days before women were upgraded to helpers. On others suitable openings were infrequent and women remained in laborers classifications for months. On two systems none were reported in the helpers grade. Coach cleaners were hired in as such and promoted to lead women or helpers.

It is significant to note that in the industry as a whole the proportion of helpers in the female maintenance of equipment force was as large as in the male force. Another significant point is that upgrading of women to helpers was much more extensive in this than in the last war. In 1918 ~~and 1920~~, for example, only about 5 percent of the women in maintenance jobs were in this classification, in 1944, on the other hand ~~almost~~ 23% were in this group.

On the ~~three~~ roads in the Bureau survey with the largest number of women in the maintenance of equipment and stores division approximately one-third, one-fourth and one-fifth respectively were in helpers classifications.

Women were, however, generally discriminated against in upgrading to skilled maintenance jobs. It is true that few ~~or none~~ could have qualified for a journeyman's grade under the normal rules which require a 3 to 5 year apprenticeship of 290 days each. However, management and labor representatives agreed to drastic wartime modification, and under these modified rules helpers with only two or even one years experience could be upgraded for the duration to skilled mechanics work.[12] On most reporting roads, however, it was found that while men were upgraded under these relaxed provisions, women were generally denied this privilege. Only on one road were a substantial number ~~upgraded to~~ found in skilled maintenance jobs. This road however had supplementary contracts under which men agreed to relinquish lighter jobs to women. However, this agreement discriminated against women in another way, ~~although~~ in that specified that all women hired during the war were temporary employees, and subject to dismissal at any time after the emergency had passed.[13]

Upgrading to gang formen's jobs was proportionately greater than upgrading to skilled mechanics work. Although 3 reporting roads with the smallest number of women employees, had none in this classification, on the other 3 close to 10, 26, ~~and 48~~ percent respectively of the gang foremen in ~~the shops, yards and roundhouses~~ maintenance of equipment and stores sections were women. This is especially noteworthy in view of the fact that a considerable amount of the literature advising railroads on supervision of women placed undue stress on their preference for male supervisors.

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[12] ~~17~~ Such employees did not have to be all-round mechanics in their craft. If they performed any operation rated as skilled mechanics work, they were classified as skilled journeymen for the period that they ~~were~~ worked at it and were paid a mechanics rate.

[13] ~~21~~ This arrangement was made with an independent union.

(Code 18) 4/15/44

1. S.P. gang foremen in Maine. Eqmt. & Stores IK

105
116
221

Women 44½
46

$\frac{46}{221} = 20.8\%$

Hours

Scheduled and Overtime Hours.

The regularly scheduled work hours on reporting roads ranged from 48 to 60 a week. Most installations of 5 systems were on a 6-8-48 weekly schedule. But on the road that ranked second in the size of its female force all the women in the shops had a 56-hour week of four 10-hour and two 8-hour days. Two installations also reported regular schedules of six 10-hour days a week. (Examination of company records on women showed that in a period of 3 months only nine 60-hour weeks were worked.)

In addition overtime above regularly scheduled hours was reported on several roads. On one, women in the yards worked seven 8-hour days or 56 hours every other week. Another road reported about half the women laborers working 4 to 6 hours and some as much as 12 hours a week above scheduled 48 hours; and one installation operating on a 60-hour basis, reported that many women worked up to 70 hours a week. Overtime from 1 to 2 hours a day was also reported on other installations.

On most roads work above 8-hours a day was optional, and biding for overtime was on a seniority basis. All time above 8-hours a day or 48-hours a week; work on Sundays, (except for specified groups); work on a seventh consecutive day and on a number of designated holidays was considered as overtime and was paid at one and a half times the basic rate.

Shifts.

Since railroading is a round-the-clock business the 24-hour work day of three 8-hour shifts is customary in many railroad departments. But unlike other industries, the railroads do not use rotation of shifts. The customary practice in this industry is to bid for prefered shifts on a seniority basis. Under this procedure available openings are listed

by occupation and shift and qualifying workers with the longest seniority get first choice.

Reporting roads employed women on all shifts. On installations reporting distribution of the female force by shift, the majority of the women were on the first shift. The total number of women on the second shift was about the same as on the third shift, but on some installations the total on the last "graveyard" shift was larger than on the second. Women on the graveyard shifts worked in the roundhouses, yards and in some shops.

Part-time work

On none of the reporting roads were any women employed on a part-time basis.

Lunch periods

The lunch periods for women were the same as for men and generally corresponded to the normal contractual provisions.

In most industrial divisions 20 or 30 minutes was allowed for lunch. Where time for eating was taken out during working hours, the period was 20 minutes. When workers ate on their own time they usually had half-an-hour for lunch. Only one exception to this rule was found on an installation where all shop workers had a paid standards 30-minute lunch period.

The collective bargaining agreements in the industry provided that up to 20 minutes, (in some cases up to 30 minutes) should be allowed for eating during the working hours to designated groups of workers or under conditions requiring continuous presence on the job.

On the roads in the survey it was found that where operations were on a three-shift basis, all workers were allowed 20 minutes for lunch during working hours. Some roads where women were only on two shifts, also reported

20-minute lunch periods during working hours, in some cases on both shifts.

On one road, however, where the collective bargaining agreement permitted a paid lunch period up to 30 minutes, only one installation allowed that much time to women in the shops. On the other installations of this system women on 10-hour work-schedules ate on their own time--which stretched their day in the shop to 10½ hours, while those on 8-hour schedules outside the shops ate within the scheduled hours.

Reported lunch time of yard clerks, other industrial clerical and some store employees ranged from one-half to 1 hour.

Rest Periods.

Although none of the railroads had modified their standard regulations to provide formal rest periods for women, most reporting installations had two informal 10 to 15-minute rest periods daily for women on industrial jobs. In one case women who were on 10-hour shifts were allowed 3-10-minute periods daily, and on another women in the roundhouses had 2-20-minute rest periods (the women in the roundhouse were on strenuous work and said they needed every minute of rest allowed.) On some installations, however, no regular time for rest was designated and on one it was reported that turntable operators had no relief for lunch or rest.

The need for establishing regular rest periods was indicated by conditions that prevailed on some installations of the two largest roads. One of these had issued no definite instructions to its administrative personnel on the subject, with the result that some provided for regular rest periods while others did not, and on the installations where no time for rest was designated, there was a great deal of argument and misunderstanding and irritation over this question.

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On one installation of the other road, where no formal time for rest was established, considerable dissatisfaction was reported over the amount of irregular time women took out for resting. Management in this instance was considering the establishment of formal rest periods.

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TURNOVER AND ABSENTEEISM

Available data on absenteeism and turnover on reporting roads were extremely inadequate. Few installations had regular records, none had a breakdown on the basis of sex or cause, or separated quits from involuntary and military separations. However, on a number of installations special computations were made upon request of the bureau agents, and these as well as estimates of supervisory personnel indicated that women in most cases had either as good or better record than men. Overall rates, however, were high.

Turnover

Industry-wide data shows an extremely high rate of turnover on the railroads during the war, but indicates that it was ~~considerably~~ lower in the female than the male personnel. Railroad Retirement Board figures, for the fiscal year, 1942-1943 show, for example about 1 million new entrants in the industry, but a total increase in the labor force of only 120,000 in this period, or a ratio of approximately 7 to 1, and 12 to 1x

While no sex breakdown in these figures is available other data indicates that the ratio in the female force was probably less than 2 to 1. This estimate is based on the Boards reports which show that about 44,000 women were employed on Class I Railroads during 1942, and other reports which indicate that in the last 4 months of that year along the female force on these roads increased by about 23,000. ~~National data obtained on reporting roads showed a weekly turnover rates in the total labor force ranging from 1 to 12 percent. No sex breakdowns in these figures were obtained.~~

(1)

This to pp (pp 53-54) seems rather "sketchy" but written according to data presented in schds. Ricker + editor please see that I have not confused "percent turnover" + "percent termination."

(2) An. Report Re Retirem't Br. 1943 p. 14

employed for 1st time between June '43 + June '42

1,000,000 more employees employed in June '43 than in June '42.
100,000 ~ more
880,000 separations

880,000 ÷ 120,000 = 7.3 times larger

An. Rept. 1944 p. 49
1,100,000 ("about one million")
85,000 ~
915,000 separations

915,000 ÷ 85,000 = 11.9 %

(3)

63,187 women Jan. 1943
40,000 " Sept. '42

(about) 40,000 / 23,000 = 1.7

On reporting roads, supervisory personnel on 3 installations estimated turnover lower among women than men, on a fourth it was stated that "women have been quite steady", and on a fifth, that turnover was higher among women than men.

Scattered statistical data obtained for limited periods did not generally indicate a sex breakdown. ~~It~~ Those giving separate figures for women showed, ~~however~~, the highest termination rates ~~for women~~ among coach cleaners and maintenance of way laborers. The lowest rates were reported in passenger car and in other repair shops and among women flagmen.

On two installations 30 and 40 percent respectively of the women coach cleaners terminated their employment in the course of a month. On two others the termination rate in this group was about 13 and 15 percent per month respectively.

The highest termination rate for shop employees was reported in a locomotive shop where the number of separations (male and female) in the course of a year equalled more than 50 percent of the total force. That suitability of job was a factor in turnover was indicated by the fact that in the passenger car shop of this same road turnover for women was said to be "small". In a shop of another road where 200 women were employed, only one termination was reported in the female force in a period of 3 months. On another installation where several thousand workers were employed in the shops, turnover for men and women was estimated at about 5 percent monthly.

Principal reasons given for high turnover among women coach cleaners was that the work was wet and dirty. Other reasons given for terminations in the female force included: Unsuitable jobs, prejudices of male workers and supervisory personnel, and more attractive wages in competing industries.

On the other hand, on one road where 300 women had been hired in the course of a year for maintenance of way work, only 33 remained at the time of the Bureau visit.

One woman supervisor, for example, thought that high turnover among women on her road (Denver & R) was due in part to the fact that foremen discouraged them and she recommended special instruction and training for supervisory personnel to eliminate such attitudes.

The importance of this factor was indicated by results achieved on another road where special steps had been taken to prevent such discrimination. This road informed its male supervisors of the urgent necessity of employing women, before women were hired, required the supervisors to interview those who seemed dissatisfied with their work, shift them to more suitable work where possible, and make every effort to keep them in service. Very little resentment against women was found in the male force of the installation visited on this road, and turnover was relatively low.

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Absenteeism

No regular data on absenteeism were kept on any of the reporting roads, and the persons interviewed were ~~equally~~ divided about the proportion of absences among the sexes. Some ~~Half~~ said there were more absences among men, the other ~~half~~ believed there were more among women. However, on one road where an actual check was made, and where supervisors generally estimated that men had a better record, their absence rate was actually in many cases as high, or higher than in female force. An extreme example was one coach yard where on the day of the visit 60 percent of the men as against 28 percent of the women were absent.

On a number of ~~roads~~ installations where special computations were made by Bureau agents for limited periods, total absenteeism rates ranged from 10 to 30 percent in the shops and from 20 to 50 percent among all coach cleaners. But these figures may reflect to a ~~very~~ large extent turnover rather than absenteeism, since under the seniority rules, it is not possible to clear very promptly voluntary terminations from the payrolls.

While no records were obtained on absences by group, on most roads the opinion was generally expressed that there had been an excessively high rate among coach cleaners, due to such factors as out-of-door work, wet jobs, and poor lavatory and rest room facilities. On installations where no proper work clothing was provided it was impossible for women cleaning coaches to keep dry and colds were prevalent among them.

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PERSONNEL POLICIES AND PRACTICES

The Office of Defence Transportation devoted a great deal of attention during the war to railroad personnel problems, and its division of Transport Personnel made numerous recommendations to the transportation industries on personnel practices that would facilitate the recruitment and retention of women in industrial transportation work. However, on most installations visited by Bureau agents few modifications in old personnel practices were found, and this lack of adaptation hampered the recruitment of women (as well as men) in a tight labor market.[1]

[1] O.D.T. Activities in this field included: (1) A conference with management and labor representatives from all transportation services on "Woman Power in Transportation" in March, 1943. (2) An Institute for Supervisors of Women Workers in transportation, October 12,-14, 1943. (3) A study of railroad work suitable for women, issued January, 1944. (4) Memorandum on "Practical Hints to Employers of Women with Special reference to Transportation, October, 1944.

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Labor Supply

Most roads reported serious labor shortages, and numerous various openings in their industrial divisions in which more women could be used. While practically all installations were in labor shortage areas a number of other factors were reported as contributing to the limited supply of female workers. These included: complicated hiring procedures, requirements to work on late shifts; wage scales below those paid for comparable work in competing industries; rough character of some jobs; isolated location of some installations and prejudices among male workers, and supervisory personnel against women.

Recruitment

Usually workers for non-operating jobs were drawn from the immediate locality and from near points along the line. One of the largest roads, however, reported that it recruited both men and women at any point ~~along~~ on the line for work anywhere on the system. In these cases workers were furnished transportation by the company, but were not guaranteed a job until after the interview at the point of employment. This practice was considered extremely undesirable for most women by the Bureau agent, who recommended that the road make every effort to employ local women whenever possible.

In two localities difficulties in recruiting workers for the railroads were ascribed partly to relatively low wage rates in this industry. The War Manpower Commission in 1944 also reported that "Non-operating employees, constituting the great majority of railroad workers, earn less than workers in comparable occupations in other industries--skilled railway shop craftsmen earn less than employees with the same skills in metal working plants, and track laborers start at 46 to 55 cents an hour, far below the entrance rate in other industries." Labor Market Information, Industry Series No. 40-1.

The principal recruiting agents and agencies used by these systems were the older employees, the company employment offices, the Railroad Retirement Board and the U. S. Employment offices. Actual hiring was generally done at the shops needing the workers by the foremen or other personnel employees. Recruiting methods used by company offices included: Newspaper advertising; radio, posters and appeals through church and other community leaders. Advertisements usually asked applicants to report at downtown offices. From these they were sent out to the installations where jobs were open.

Hiring

The hiring procedure, on some installations, was relatively simple. Workers applied at the installation office, were interviewed by the foremen, given a physical examination, and those who met the minimum requirements were hired and assigned to their jobs. On others, however, the hiring process was extremely complicated, and hampered the recruitment of both women and men. The worst conditions, strangely enough, were found on a road that reported very serious labor shortages and was trying to make the maximum use of women in industrial operations. This road, however, had made no modifications in its old hiring procedures, which were especially unsuitable for women new in the labor market.

In some large industrial communities this system, for example, required workers to apply first at its downtown employment office. From these, if they had no certificate of availability, they were sent to the Railroad Retirement Board or the U. S. Employment Service to obtain one. When (and if) they returned, they were sent out to the shops for an interview with the foremen. The shops were frequently on the outskirts of the city and not easily accessible. If a worker

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was hired by the foreman of the shops and there was no doctor present on the premises, she had to go back to the city for a physical examination, and if she passed the examination she reported to work. Extremely wide discrepancies between the number of applicants and the number reporting at the shops indicated that many prospective employees were lost in this complicated shuffle.

Some of the employment offices on this road were also extremely crowded, and poorly laid out, and few women interviewers were employed.

Recommendations of Bureau agents to facilitate recruitment of women on this road included: 1. A simplified procedure that would make possible the clearance of all hiring prerequisites in one visit. 2. Provisions for transporting workers from downtown offices to the shops. 3. More specific information on the nature of the work involved in jobs offered to women. 4. Use of women interviewers, and better laid out offices as a means of easing the entrance process for women, especially those new in the labor market.

Selection

Selection of women on reporting roads was made chiefly on the basis of health and age. In the maintenance division where women were hired mostly for unskilled work, little other selectivity was exercised If any applicant passed her physical examination, and was within the age limit, she was eligible for a job. The final determination, however, was made by the hiring agent, who was usually the foreman, and he generally determined, what work was suitable for the applicant.

With the exception of one installation, medical examinations were used only to determine general fitness, but not the type of work on which a woman should be used. Those who did not pass the standard physical requirements were simply not considered for any work. The thoroughness of the examinations varied markedly between systems, but in most cases included checking of heart, lungs, distance vision, and blood pressure.

The age limits ranged from 16 to 65 years for women and up to 70 for men. On half the roads the minimum was 18 years and for the more hazardous jobs it was 21. The maximum ranged from 45 to 65. The great majority were in the 25-45 age range. On one of the largest roads where the theoretical maximum was 55 the agent reported that she did not see any women in the shops anywhere near this age. One of the roads that reported a serious shortage of clerical workers, was turning down women applicants over 45 because this was its formal limit for new clerical employees.

Orientation and Induction

Where women supervisors were present they took new women employees in charge, introduced them to the foremen and other employees, showed them their lockers and restrooms, explained regulations concerning work clothing, safety, lunch and rest periods, and other matters relating to facilities and procedures. In most other cases workers reported directly to their immediate superior, who assigned them to their jobs and gave them the essential information about facilities and other regulations. The adequacy of the workers induction varied with the ability of the person in charge.

The entrance of women to [illegible] was new.

In other industries studied by the Women's Bureau during the war, notably the Army supply depots, older women and women with minor physical handicaps were used effectively on the lighter industrial operations in areas where labor shortages were acute, no effort to use such women were reported in any of the railroads - although critical labor shortages were reported by most.

Table three should be qualified.
Code 30. table 4 gives num. & max. ages of women
by W.R.s.
Pd. Re - sch. only read giving no. of women employed by
age range.

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Training

Railroads usually train their workers on the job and normally develop their semi-skilled and skilled force through a slow training process, governed by seniority, in the course of which junior employees learn gradually but thoroughly every phase of the work involved in their occupations or crafts. While this process has been expedited during the war, on-the-job training for new workers remained the prevalent practice in railroad maintenance division.

With one temporary exception, all women employed in the maintenance divisions of reporting roads were given only on-the-job training. But off-the-job instructions were provided on a number of roads for women telegraphers, teletype operators, ticket sellers and other clerical workers.

The exception in the maintenance divisions was one road where a woman supervisor had a number of classes for a brief period in which new women were taught the meaning of repair instructions and the names of ~~parts~~ equipment and tools they handled in the course of their work. These instructions, useful to any workers unfamiliar with industrial terminology, ~~were~~ are of special value on the railroads which have a language almost of their own. However, even this limited course was discontinued because the supervisor who initiated it had too many other responsibilities.

Since women in the maintenance divisions began usually as coach cleaners or laborers, they needed relatively little training in the actual work processes. They received their instruction from foremen or more experienced workers, and were usually placed with older employees while learning their job. Most of these upgraded to helpers jobs, worked under the continuous supervision and direction of skilled employees.

Some cases were reported where women studied outside working hours on their own initiative, but there was little incentive for this in maintenance divisions, since few skilled jobs were open to ~~women~~ them.

In other branches of operations, telegraphy was the most frequently mentioned occupation in which off-the-job training was required or provided. One system reported that it sent its women trainees to a regular school and paid them during the training period which lasted several weeks. Another provided a 6-month training course for telegraphers and reported that upon completion of the course some women were sent to stations where train orders were extremely heavy. On another road a woman, who was assistant superintendent of ~~its~~ the telegraphers department, supervised the training of women telegraphers on company premises, gave them examinations and stayed with them on the job for a time. One road reported that it employed only women who were already trained in commercial telegraphy schools.

Safety, Accidents and Protective Clothing

Safety instructions received considerable attention on several reporting installations. One of the largest roads which had a safety department on a system level reported quarterly meetings for supervisors and other key men on safety problems, and weekly or monthly meetings for foremen and workers on company time. Another road, ~~which~~ also reported weekly safety meetings, had a woman member on the safety committee at each point where women were working.

Workers were generally given printed safety regulations upon employment or were instructed by their foremen in the most essential safety rules. One system ~~reported a number of~~ had different safety books for the various departments, and a regular periodical dealing with safety matters. On one installation films were used occasionally in safety instructions.

No separate accident figures for women were available, but on most reporting installations it was claimed that the majority of women's accidents were of a minor nature with a large proportion caused by falling on wet or oily surfaces. One one installation where women's accident records were analyzed exactly half were caused by falling or slipping. Inadequate yard lighting facilities at night in locations where women had to cross tracks were reported in a number of cases.

Dermatitis was reported as quite a problem for women who washed cars with Oakite solution, and for those on waste reclamation jobs in some installations, but others claimed they had no complaints from workers regarding dermatitis. A number of installations reported that they provided protective salves for workers exposed to dermatitis.

On some roads rubber boots, aprons, gloves and goggles were furnished to women coach sleaners, and safety belts to those who wiped down the engine jackets (women engine wipers had to climb up and walk along a very narrow running board and the belt hooked to a rod running along each side of the engine was a protection against falls.)

On some installations, however, foremen did not think such equipment necessary, and on some of these, women who helped wash the outside of cars got very wet in the course of their work.

All 6 companies, however, reported furnishing goggles on most operations where they were needed. On one where they were provided on 42 different operations, instructions for wearing them (not always complied with) were given to employees at the time they were issued.

Safety shoes were required by three companies on certain jobs, and recommended by others. Special stamps for such shoes were allowed, but only one company took the responsibility for selling them to its employees. Difficulties in securing these shoes were given as reasons for lax requirements and inadequate supply provisions.

Slacks and overalls were required only on one installation, but these as well as headgear were recommended by all companies, and women were generally wearing them.

Since there is considerable steam, oil greases and water about on most jobs in the maintenance division, women were generally glad to cover their heads with bandanas or caps. Wearing of jewelry was universally discouraged and women apparently complied wholeheartedly. On the whole women complied well with safety clothing regulations except for footwear.

Personnel Counseling

Counseling and other personnel matters affecting women received less attention on visited installations that most personnel experts consider desirable. However 3 of the 5 reporting systems had women "supervisors" on their personnel staffs whose principal responsibility was to advise on matters relating to women 's employment & welfare facilities and other personnel problems.

The two largest roads had 3 women each and the third had 1 working in this capacity. These women had jurisdiction over entire divisional areas. Since these railroad divisions in some cases included several industrial installations in a number of communities, ~~some installations~~ were unable to ~~visited by the women supervisors~~ Some only once in 2 months.

None of the roads reported any other women counselors continuously present on individual installations, although some may have been employed. On some cases reported lead women and women classified as foremen handled personnel problems other than those relating to the job functions. On one road, for example, a Mexican woman foreman assisted Mexican nationals with such problems as housing, transportation and rationing. But few other instances of regular counseling on a local level were reported aside from that given by the division supervisors when they were present on installations.

The functions and duties of most women supervisors were not clearly defined. All reported that they advised and were, or expected to be, consulted on all matters relating to personnel problems of women. Apparently plant supervisors were always not informed of the exact functions these women were to have and this in some cases limited considerably their activities and influence.

One woman supervisor stated that she succeeded in establishing a good relationship with departmental supervisors, and was consulted on problems arising in relation to women in these departments. On this road one of the supervisors had authority to hire women when she was at the main office, and assisted with the induction of women when she was present at the installations. One of these supervisors also organized a course of instructions for new industrial women employees, but had to discontinue it due to the fact that she did not personnally have time to keep it going.

The supervisor on another road reported that she was able to visit regularly all the departments where women were employed and kept in close touch with all problems affecting their welfare. The only specific accomplishment she mentioned, however, was the expansion of washroom facilities for women. This supervisor said, she advised and reported directly to the divisional superintendent.

None of the women supervisors whose background was given had previous personnel relations experience or training. Some were wives of railroad executives, and therefore had some background and understanding of railroad traditions. Another was formerly a teacher and had child care experience, but was doing very effective work on her personnel job.

Non-White Employees

No road was operating without Negro women, and while some installtions had few or none on their force, on others they filled many essential unskilled jobs, and on the largest road they comprised more than 20 perecent of the female personnel in 1943.

Many were coach cleaners, and on some installations predominated in this group; a considerable number were on yard, track and roadbed maintenance crews; some worked in roundhouses, cleaning and oiling locomotives, operating roundtables and doing cleaning-up jobs; others were loaders, truckers, dining and kitchen service employees, laundresses, train attendants, janitresses, matrons, and on various other housekeeping and personal service jobs.

Most roads had no Negro women in semi-skilled or skilled industrial occupations, however some were lead women of laborers and cleaners and some were assistant foremen and even foremen of coach cleaners. On one road, for example, a Negro woman, had been foreman of coach cleaners for over a year and had jurisdiction over subforemen, including a man. On the largest road a number of Negro women had been advanced to skilled mechinics' helpers but on some none were employed in the shops.

Normally the industry employs few Negro women. In 1942, for example, only 4,400 of the 81,400 women who had credited compensation on Class I roads during the year were Negro, more than three-fourth of this total were in laborers' classifications and the majority of the others were cleaners, janitresses and train attendants; only about 30 were in clerical jobs. In midsummer of 1943, on the other hand, one large road alone reported over 4500 Negro women employees.

On two installtions visited Mexican women were employed on trackwork and as coach cleaners, and another reported using "just about every nationality".

Pregnancy Policies

No uniform or formal policy was found among any of the railroads regarding pregnancy cases. Usually, if at the time of the physical examination it was discovered that the woman was pregnant she was not hired. But she was not asked to reveal this fact. In one system, when the pregnancy of two women became known, they were transferred to lighter work and were told that they could have leaves of absence so that they could return to work. The policy concerning pregnancy is generally worked out on an individual basis, and settled according to the opinion of the supervisor. No doubt, often women in this conditions resign without giving the reason to the company. One agent stated: "Pregnancy does not seem to be a matter of much concern or interest in any division. No worker who is furloughed for a legitimate reason loses his seniority, and this applies to pregnancy....."

Mothers with Children under Sixteen

The four railroads reporting said that no records were kept of the employment of mothers with children under sixteen years of age. It is known, however, that women with children of this age are employed, for one company states that it is difficult to transfer women with children of this age to other shops as might be desirable at time, and one supervisor says she assists the workers who apply to her in finding care for their children.

69

Union Organization and Affiliation

The railroads are among the most completely unionized industries in the country, and although no closed shop agreements are permitted in the industry, between 85 and 90 percent of the workers in the different branches of operation are union members.

On reporting roads most unions claiming jurisdiction over occupations in which women were employed admitted them to membership, although some restricted membership to men only in the past. One large road estimated that between 80 and 90 percent of the women on the various installations were union members.

In most cases women were apparently admitted to unions on the same basis as men. But restrictions were reported against Negro workers, both male and female. In one case it was stated that Negroes were admitted to membership, but were segregated, and in another it was claimed that their voting privileges were restricted. [1] [17]

While no specific information was secured on the membership status of women in two independent unions, it is possible that their membership, like their employment, was limited to the national emergency period.

As has been previously indicated, women in most cases had the same contractual protections as men. But this was not conditional upon union membership. Provisions in collective bargaining contracts applied equally to union and non-union workers. However since grievances were handled through the collective bargaining machinery, there is obvious advantage in holding union membership. The high proportion of union affiliations

[17]

[1] The constitutions of a number of railroad unions have provisions that make possible various forms of membership restrictions on the basis of race.

(1)

5d p. 18

For system (S.P.) gives 80 to 95% of all workers, Dining members.

5b p. 10 Southern District (S.P.) gives 95% of women as members.

I think 90% OK.

(2) Agreements. See —

24 - System for S.P. No. 114 with A. F. L. mechanical acc.

24a - " " " " " " " " clerks

5h — Brotherhood of Railway + + + clerks, Freight Handlers, etc.

also see

Union folders.

is doubtless also due in part to the prejudice that exists among the workers in this long organized industry against "no-bills"--that is employees who benefit from collective bargaining but do not contribute to the maintenance of collective bargaining agencies through union membership and dues.

No data was obtained on dues of women workers and very little information was secured about their participation in union activities. Only one case was reported where a woman had been serving on a machine shop committee-- for over a year, and on one installation it was reported that women lost out on an important question affecting their promotion opportunities partly because they did not attend union meetings.

In the management group only one case was found where a woman supervisor participated regularly in labor-management committee meetings.

71

PERSONNEL FACILITIES

Rest Rooms

Adequate, roomy and well equipped restrooms and lavatories for women were rare in the industrial divisions of the installations visited. In some departments proper provisions were made, but in most cases these facilities were inadequate, poorly planned or poorly equipped.

One installation with almost 500 women, for example, had only 77 lockers for them. Some restrooms and lavatories were far from the workers and women had to walk blocks to get to them. Some toilets had curtains but no doors. Hot water, lockers, cots, and similar equipment were either inadequate or entirely lacking. Wash bowls, paper towels, mirrors, tables, chairs, drinking fountains were meagerly supplied.

On a number of installations it was reported that these facilities were either in the process of being expanded, or that plans for expansion had been submitted. On some it was stated that the shortage was due to difficulties in obtaining materials. However, the extent of the inadequacies indicated that insufficient attention had been generally given to these basic essentials, and the generally poor conditions, doubtless resulted in poor morale, loss of time, and even loss of workers. One agent commenting on the inadequate restroom and locker provisions on one large road reported that: "The work of women is dirty, wet, and greasy and the inability to change their clothes before going home is a distinct annoyance to them and is a contributing factor to turnover."

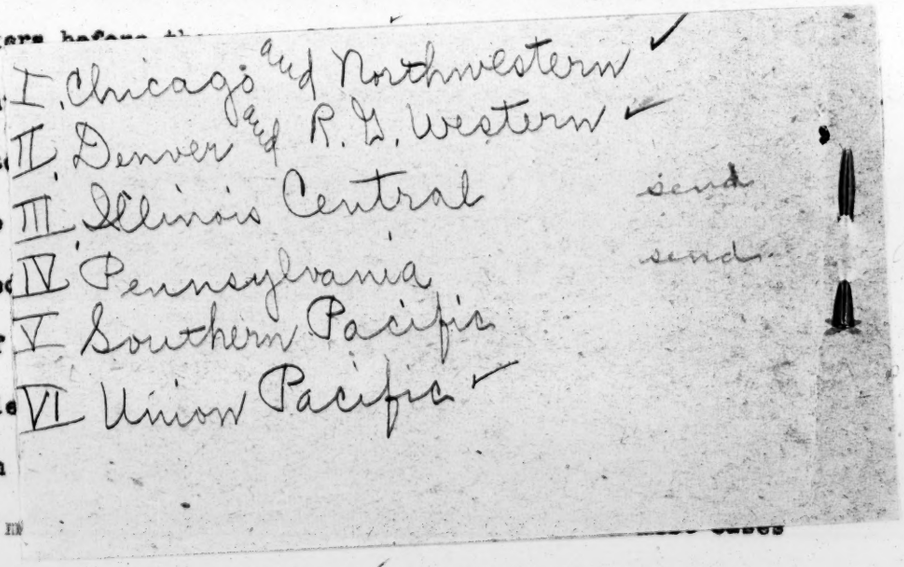
Eating Facilities

No company-owned cafeterias or lunch rooms were found in any of the installations. On the whole, little effort has been made on the part of the companies to have in-plant food services. In only two places were concessions operating. These places usually serve milk, candy, ice cream, soft drinks, but no sandwiches. In only one plant, were sandwiches sold. The majority of workers brought their lunches, and those not buying them patronized near-by restaurants and cafeterias.

Only one of the six systems provided lunch rooms for women. At all other places women ate in their rest or change rooms. These quarters are not always clean and seldom sufficiently large. At one engine house, the women complained about flies and asked that screens be put in.

Medical Facilities

All systems had medical departments and medical examinations were given to most workers before th... for servicing plan... reported both doct... only, on duty. No... One system reporte... hospital. Five of... First aid facilitie... There was not even...



The initial m... cases but one company required workers to pay one dollar for the examination.

Two systems reported having group insurance plans covering hospital and medical costs. On one the cost was $1.60 per month on another $1.75.

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Medical Facilities

All systems had medical departments and medical examinations were given to most workers before they were hired. But medical facilities for servicing plant workers varied greatly between installations. Two reported both doctors and nurses on duty daily; one reported a doctor only, on duty. No night duty was reported for either doctors or nurses. One system reported sending employees injured at night to the "nearest" hospital. Five of the 6 roads reported ambulance service available. First aid facilities on one installation consisted of first aid kits only. There was not even a first aid room, however, an ambulance was available.

The initial medical examination was apparently free in most cases but one company required workers to pay one dollar for the examination.

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Transportation

All reporting installations were close to public transportation facilities, and buses and street cars brought workers within a few blocks or upt to the yards and shops. Need for supplementary company transportation however, was indicated for taking applicants from downtown employment offices to the installations, which were generally some distance from the center of the city. Company transportation for taking women on night shifts to and from their bus or car stops was also considered desirable by Bureau agents. In a number of cases women stated that they had to walk a few blocks from their bus stops to the shops or yards, and that they were timid about crossing this distance alone at night.

As is the custom on the railroads, all installations gave free passes to their employees if they lived in one locality and worked in another. One system reported that when employees were transferred to a new locality, transportation was provided not only for the worker but also for his dependents.

Housing

In most localities, housing has not been a problem. One system reported that in isolated places, housing cars are used for men workers. When requisitioning workers, this company acquainted them with the housing situation and facilities available for workers. Another system reports using box cars on grounds back of a shop for Negro workers. In this instance, the wives were encouraged to work.

Child Care

Although a number of the cities where installations of the railroads are located have well-equipped child-care centers, most of the companies in these cities make no report on child-care problems. Only one woman counselor reports that she refers workers with welfare and child-care problems to local social welfare bureaus. Without reports from the child-care agencies in the cities, it would be difficult to determine whether child care is really a problem among the railroad employees.

5b p.11

In one system, the woman counselor assists women with matters of child care, however, because of her many duties she is only able to assist those who live in the vicinity of her office.

S.P.

5d p.19

(One supervisor expressed the opinion that child care did not affect absenteeism and turnover.)

S.P.

5g p.1

Table 3. — NUMBER OF WOMEN EMPLOYED IN MAJOR DIVISIONS OF CLASS I STEAM RAILWAYS

END OF EACH QUARTER IN 1943 AND 1944 1/

(Mid-month figures)

Major Divisions	1943 January	1943 April	1943 July	1943 October	1944 January	1944 April	1944 July	1944 October
	Numb. of women	Perc. of total force	Numb. of women	Perc. of total force				
TOTAL- All Divisions	63,187	82,107	94,466	103,209	105,901	112,063	116,425	115,704
I Executives, Officials and Staff Assistants	18	17	18	18	18	18	18	17
II. Professional Clerical and General	48,138	55,532	63,113	67,694	70,379	73,769	77,010	77,819
III. Maintenance of Way and Structures	745	3,126	2,879	3,027	2,402	2,741	2,746	2,402
IV. Maintenance of Equipment and stores	9,439	15,613	19,548	21,734	21,545	23,310	23,333	21,996
V. Transportation other than train, engine, and yard.	4,843	7,404	8,704	10,468	11,273	11,908	12,945	13,135
VI(a) Transportation((Yardmaster, switchtenders and hostlers)	—	13	30	37	34	53	69	53
VI(b) Transportation ((Train and Engine)	4	102	174	231	250	264	301	282

ICC Quarterly Reports - Women

Code 12

Computations made and ck'd by Statistical Dir. Editorial rec'd 9/17/45.

Table 4. — NUMBER AND OCCUPATIONAL DISTRIBUTION OF WOMEN EMPLOYED BY CLASS I RAILWAYS
January 1943 and July 1944 1/
(Mid-Month Figures)

ICC Quarterly Reports for women
Code 12

Divisions and Occupations	January 1943		July 1944		
	Number of Women	Percent of total Employees	Number of Women	Percent of total Employees	Percentage change from Jan. 1943
I. EXECUTIVES, OFFICIALS, AND STAFF ASSISTANTS					(Based on no. women)
Executives, general officers, and assistants	11	0.18	10	.15	- 9.1
Division officers, assistants, and staff assistants	7	.09	8	.10	+ 14.3
Total (executives, officials, and staff assistants)	18	.13	18	.12	no change
II. PROFESSIONAL, CLERICAL, AND GENERAL					
Professional and subprofessional assistants	67	.95	244	3.08	+ 264.2
Supervisory or chief clerks (major departments)	47	1.38	64	1.83	+ 36.2
Chief clerks (minor departments) and assistant chief clerks and supervising cashiers	333	3.32	569	5.38	+ 70.9
Clerks and clerical specialists (A)	692	6.69	1,244	10.94	+ 79.8
Clerks (B and C)	21,683	20.89	40,487	33.84	+ 86.7
Mechanical device operators (office)	5,893	78.21	7,244	86.36	+ 22.9
Stenographers and secretaries (A)	1,699	49.32	2,297	62.52	+ 35.2
Stenographers and typists (B)	11,198	72.62	14,656	84.76	+ 30.9
Storekeepers, sales agents, and buyers	13	.58	21	.90	+ 61.5
Ticket agents and assistant ticket agents	81	6.66	191	14.17	+ 135.8
Traveling auditors or accountants	2	.15			(- 100.)
Telephone switchboard operators and office assistants	3,978	82.50	5,436	91.56	+ 36.7
Messengers and office boys	1,068	27.02	2,025	47.47	+ 89.6
Elevator operators and other office attendants	120	12.61	212	20.38	+ 76.7
Lieutenants and sergeants of police	5	.27	6	.32	(+ 20.0)
Patrolmen and watchmen	7	.06	53	.62	+ 657.1

1/ Data are based on mimeographed reports issued at three-month intervals since January 1943 by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission, entitled "Number of Employees Employed by Class I Railways." These figures do not include switching and terminal companies.

Steam 1

& transportation Dept Special figures prepared from basic "mimeo" reports of Bur. of Transp. Econ. & Stat. I.C.C.

1945	
January	April
114,199	115,876
17	19
78,665	80,026
4,589	1,765
20,716	20,344
12,902	13,388
40	57
270	277

Later
10/25/45
Recvd July '45 Ltr. from Dec. C. ordered

For ck

Dates of agents' visits

Chicago & N. W. — July 9, '43
Denver & R. — Denver, Salt L. City — May 6 '43
Sell. C — July 12 '43
Pa — July 10 '43
U. P. — Ogden, Salt L. City — Apr. 29 '43
S. P. — Mrs. Bagwell (at Ogden) — Apr. '43
Mrs. Bell (other installations) Apr. & May 44

S P = 4/16/43 Bagwell

Note that Tables 1, 2 & 4 (as of 7, 12, 76) are as of July 1944.

These figures are available for Class I Rds. Assume Mrs. Dec. was undecided about using or even Oct. '44 because of earlier dates when installations visited — Apr. to July '43, & Southern Pac. data as of Apr. 15, 1944.

Divisions and Occupations	January 1943		July 1944		
	Number of Women	Percent of total Employees	Number of Women	Percent of total Employees	Percentage change from Jan. 1943
Traffic and various other agents, inspectors, and investigators	72	.69	143	1.34	+ 98.6
Claim agents or investigators	4	.46	22	2.43	+ 450.0
Freight claim agents or investigators	11	2.90	23	5.97	+ 109.1
Miscellaneous trades workers (other than plumbers)	18	2.20	22	2.80	+ 22.2
Motor vehicle and motor car operators	36	1.04	114	2.90	+ 216.7
Janitors and cleaners	1,111	19.98	1,937	31.71	+ 74.3
Total (professional, clerical, and general)	48,138	22.90	77,010	33.40	+ 60.0
III. MAINTENANCE OF WAY AND STRUCTURES					
Bridge and building gang foremen (skilled labor)	-	-	1	.02	+
Bridge and building carpenters	1	.01	2	.01	+ 100.0
Bridge and building painters	5	.19	14	.51	+ 180.0
Maintenance of way and structures helpers and apprentices	6	.08	67	.96	+ 1016.7
Portable steam equipment operator helpers	1	.18	10	1.44	+ 900.0
Pumping equipment operators	5	.24	10	.47	+ 100.0
Gang or section foremen	1	.03	1	.003	Unchanged
Extra gang men	375	.86	1,089	1.64	+ 190.4
Section men	260	.20	1,456	.97	+ 460.0
Maintenance of way laborers (other than track and roadway) and gardeners and farmers	91	2.20	70	1.96	- 23.1
General and assistant general foremen, and inspectors (signal, telegraph, and electrical transmission)	-	-	1	.08	+
Signalmen and signal maintainers	-	-	1	.01	+
Assistant signalmen and assistant signal maintainers	-	-	5	.27	+
Signalman and signal maintainer helpers	-	-	19	.52	+
Total (maintenance of way and structures)	745	.35	2,746	.94	+ 268.6

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Divisions and Occupations	January 1943		July 1944		
	Number of Women	Percent of total Employees	Number of Women	Percent of total Employees	Percentage change from Jan. 1943
IV. MAINTENANCE OF EQUIPMENT AND STORES					
Equipment, shop, electrical, material and supplies inspectors	1	.05	2	.09	+ 100.0
Gang foremen and gang leaders (skilled labor)	2	.03	5	.06	+ 150.0
Blacksmiths	-	-	3	.05	+
Boilermakers	2	.01	2	.01	no change
Carmen (A and B)	12	.07	60	.31	+ 400.0
Carmen (C and D)	4	.01	99	.16	+ 2375.0
Electrical workers (A)	2	.02	43	.47	+ 2050.0
Electrical workers (B)	2	.08	33	1.24	+ 1550.0
Machinists	4	.01	128	.25	+ 3100.0
Sheet-metal workers	1	.01	6	.05	+ 500.0
Skilled trades helpers (M. of E. and Stores)	1,039	1.20	5,394	5.71	+ 419.2
Coach cleaners	3,263	28.04	6,526	45.50	+ 100.0
Gang foremen (shops, enginehouses, and power plants)	55	4.25	131	8.57	+ 138.2
Gang foremen (stores and ice, reclamation, and timber-treating plants)	13	1.10	20	1.51	+ 53.8
Classified laborers (shops, enginehouses, and power plants)	1,005	3.77	2,844	10.08	+ 183.0
General laborers (shops, enginehouses, and power plants)	2,629	10.19	5,426	19.79	+ 106.4
General laborers (stores and ice, reclamation, and timber-treating plants)	1,386	8.44	2,602	13.94	+ 87.7
Stationary engineers (steam)	15	.89	3	.19	- 80.0
Stationary firemen, oilers, coal passers, and water tenders	4	.12	6	.22	+ 50.0
Total (maintenance of equipment and stores)	9,439	2.76	23,333	6.19	+ 147.2

	January 1943		July 1944		
	Number of Women	Percent of total Employees	Number of Women	Percent of total Employees	Percentage change from Jan. 1943
V. TRANSPORTATION (OTHER THAN TRAIN, ENGINE, AND YARD)					
Train directors	-	-	1	.62	+
Train dispatchers	2	.06	-	-	-
Station agents (supervisory - major stations - nontelegraphers)	1	.04	-	-	-
Station agents (smaller stations - nontelegraphers)	274	5.15	417	8.03	+ 52.2
Station agents (telegraphers and telephoners)	266	1.88	652	4.60	+ 145.1
Chief telegraphers and telephoners or wire chiefs	5	.60	15	1.62	+ 200.0
Clerk-telegraphers and clerk-telephoners	585	5.65	1,856	17.25	+ 217.3
Telegraphers, telephoners and towermen	751	4.86	1,935	11.72	+ 157.7
Station masters and assistants	-	-	1	.22	+
Baggage agents and assistants	13	3.76	12	2.99	- 7.7
Baggage, parcel, and station room attendants	594	7.17	1,662	17.87	+ 179.8
Assistant general foremen (freight stations, warehouses, grain elevators, and docks)	-	-	1	.50	+
Gang foremen (freight station, warehouse, grain elevator, and dock labor)	-	-	8	.29	+
Callers, loaders, scalers, sealers, and perishable-freight inspectors)	28	.26	126	1.00	+ 350.0
Truckers (stations, warehouses and platforms)	181	.74	1,605	5.55	+ 786.7
Laborers (coal and ore docks and grain elevators)	1	.13	16	.91	+ 1500.0
Common laborers (stations, warehouses, platforms, and grain elevators)	31	.71	130	2.75	+ 319.4
Stewards, restaurant and lodging-house managers, and dining-car supervisors	87	4.91	150	7.34	+ 72.4
Chefs and cooks (restaurants or dining-cars)	72	1.27	453	6.86	+ 529.2
Waiters, camp cooks, kitchen helpers, etc.	1,186	7.92	2,490	13.82	+ 109.9
Officers, workers, and attendants on barges, launches, ferry boats, towing vessels, and steamers, and shore workers	47	.76	79	1.20	+ 68.1

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Divisions and Occupations	January 1943		July 1944		
	Number of Women	Percent of total Employees	Number of Women	Percent of total Employees	Percentage change from Jan. 1943
Transportation and dining-service inspectors	2	.30	8	1.03	+ 300.0
Train attendants	94	2.65	183	3.95	+ 94.7
Bridge operators and helpers	3	.33	1	.10	- 66.7
Crossing and bridge flagmen and gatemen	264	2.00	672	4.98	+ 154.5
Foremen(laundry) and laundry workers	356	64.96	475	79.03	+ 33.4
Total (transportation - other than train, engine, and yard)	4,843	3.27	12,948	7.97	+ 167.4
VI. (a) TRANSPORTATION (YARD MASTERS, SWITCHTENDERS, AND HOSTLERS)					
Switch tenders	-	-	66	2.02	+
Outside hostler helpers	-	-	3	.18	+
Total (transportation - yardmasters, switch-tenders and hostlers)	-	-	69	1.40	+
VI. (b) TRANSPORTATION (TRAIN AND ENGINE)					
Assistant road passenger conductors and ticket collectors	-	-	209	5.78	+
Road passenger brakemen and flagmen	4	.04	67	.65	+ 1575.0
Yard brakemen and yard helpers	-	-	19	.04	+
Yard firemen and helpers	-	-	6	.03	+
Total (transportation - train and engine)	4	.04	301	.34	+ 7425.0
Total of reporting divisions in which females are included	63,187	6.76	116,425	9.95	+ 84.3
Grand total, all reporting divisions	63,187	4.79	116,425	8.07	+ 84.3

(all)

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